ZS-5

SERVICE MANUAL

Tourist Model

COMPACT disc DIGITAL AUDIO

SPECIFICATIONS

CD Player section

System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wave length 780 nm Emission duration: Continuous Laser output: Less than 44.6μW* *This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.
Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Error correction	Sony Super Strategy Cross Interleave Read Solomon Code
Number of channels	2
Frequency response	20 – 20,000Hz ± 1 dB (EIAJ)
Wow and flutter	Below measurable limit (EIAJ)

Radio section

Frequency range	FM: 76 – 108 MHz AM: 531 – 1,629 kHz (9 kHz frequency interval) 530 – 1,710 kHz (10 kHz frequency interval)
Antennas	FM: Telescopic antenna AM: Built-in ferrite bar antenna

Tape recorder section and general

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 120 sec. with Sony cassette HF60
Speaker	Woofer: 8cm dia., cone type, Tweeter: 5 cm dia.

CD Section	Model Name Using Similar Mechanism	NEW
	Optical Pickup Block Type	KSM-2401AAN
Cassette Deck Section	Model Name Using Similar Mechanism	CFD-400/500
	Tape Transport Mechanism Type	DECK A: MF-5PB-65
		DECK B: MF-5RP-65

Frequency response	TYPE I (normal) cassette	50 – 15,000 Hz (EIAJ)
	TYPE II (CrO_2) cassette	50 – 16,000 Hz (EIAJ)
	TYPE IV (metal) cassette	50 – 18,000 Hz (EIAJ)

Inputs	Mixing microphone input jack (minijack) Sensitivity 2.5 mV For low impedance microphone
Outputs	Headphones jack (stereo minijack) For 16 – 64 ohms impedance headphones
Maximum power output	7.5W + 7.5W (at 8 ohms, 10% harmonic distortion)

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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— Continued on next page —

使用時は添付資料も参照のこと
Refer to the additional documents.

PERSONAL AUDIO SYSTEM

SONY®

Power requirements	For CD radio cassette-corder AC 100V-110V, 120V, 220V, 240V DC 12V, 8 size D (R20) batteries For clock/timer/memory DC 6V, 4 size AA (R6) batteries For remote commander DC 3V, 2 size AA (R6) batteries
Power consumption	30-37W (100-110V) 37W (120V, 220V, 240V)

Battery life

Batteries for CD radio cassette corder

	Recording	Playback	CD playing
Sony SUM-1 (NS)	approx. 4H	approx. 2H	approx. 1H
Sony Alkaline AM1	approx. 9.5H	approx. 5H	approx. 3.5H

For clock/timer/memory: approx. 1 year

Dimensions	480 × 198 × 252.5 mm (w/h/d) (EIAJ) incl. projecting parts and controls
Weight	7.9kg (incl. batteries; excl. supplied accessories)
Supplied accessories	AC power cord (1) Remote commander (RMT-C5) (1) AC plug adaptor (1)

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, ètc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

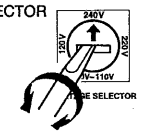
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

Precautions

On power source

- Before operating the unit, make sure that the operating voltage of your unit is identical with that of your local power supply.
  For AC operation, use the supplied AC power cord; do not use any other type.
  For battery operation, use eight size D (R20) batteries.
- The voltage selector is located on the rear of the unit.

VOLTGE SELECTOR



- Unplug the unit from a wall outlet when it is not to be used for an extended period of time.
- When the internal batteries are not to be used, remove them to avoid damage caused by battery leakage or corrosion.

On safety

- As the laser beam used in the CD player section is harmful to the eyes, do not attempt to disassemble the casing. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the unit, unplug the unit, and have it checked by qualified personnel before operating it any further.
- The nameplate indicating operating voltage, power consumption, etc. is located at the bottom.

On placement

- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place anything within 10 mm of the side of the cabinet. The ventilation holes must be unobstructed for the proper operation of the unit and to prolong the life of its components.
- If the unit is left in a car parked in the sun, be sure to choose a location in the car where the unit will not be subjected to the direct rays of the sun.
- Since a strong magnet is used for the speakers, keep personal credit cards using magnetic coding or spring-wound watches away from the unit to prevent possible damage from the magnet.

On operation

- If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the CD player section. Should this occur, the player will not operate properly. In this case, remove the disc and wait about an hour for the moisture to evaporate.
- If the unit has not been used for a long time, set it in the playback mode to warm it up for a few minutes before inserting a cassette.

Note on using a cassette with more than 90 minutes of playtime

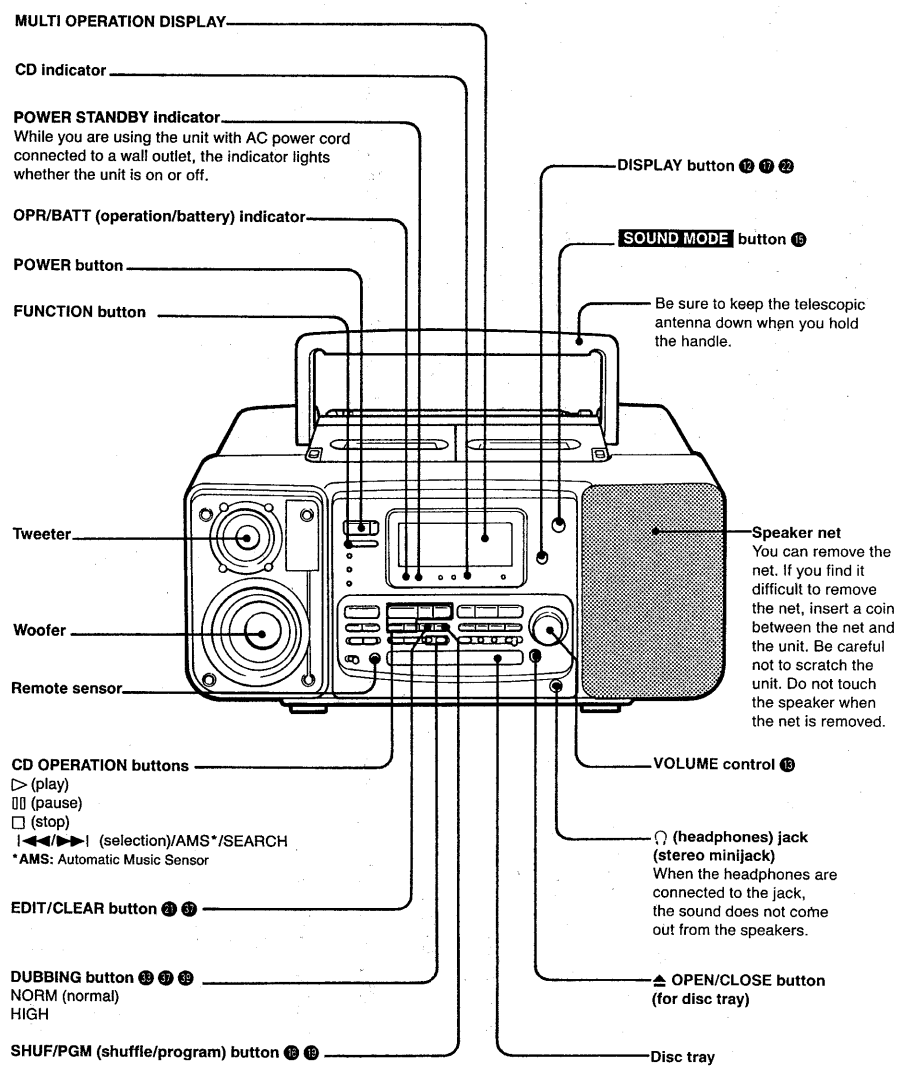
The use of a cassette with more than 90 minutes of playtime is not recommended except for long, continuous recording or playback.

Warranty Information

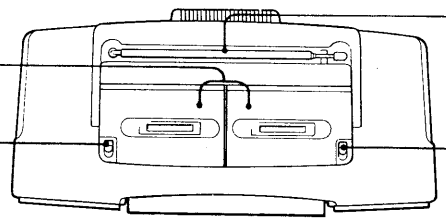
- This product is provided with a warranty. Make sure that you receive it on purchase.
- Check the information on the warranty and keep it in a safe place.
- The warranty is valid for one year from the date of purchase in Japan, and for 90 days from date of purchase in other countries.
- If you have any questions about warranty service, contact the nearest Sony Service Center listed in the warranty.

Parts Identification Refer to the page indicated in ● for details.

CD Player Section


MULTI OPERATION DISPLAY
CD indicator
POWER STANDBY indicator
While you are using the unit with AC power cord connected to a wall outlet, the indicator lights whether the unit is on or off.
OPR/BATT (operation/battery) indicator
POWER button
FUNCTION button
Tweeter
Woofer
Remote sensor
CD OPERATION buttons
▷ (play)
▯▯ (pause)
□ (stop)
I◀◀/▶▶I (selection)/AMS*/SEARCH
*AMS: Automatic Music Sensor
EDIT/CLEAR button ㉑ ㊲
DUBBING button ㉓ ㊲ ㊳
NORM (normal)
HIGH
SHUF/PGM (shuffle/program) button ⑱ ⑲
DISPLAY button ⑫ ⑰ ㉒
SOUND MODE button ⑮
Be sure to keep the telescopic antenna down when you hold the handle.
Speaker net
You can remove the net. If you find it difficult to remove the net, insert a coin between the net and the unit. Be careful not to scratch the unit. Do not touch the speaker when the net is removed.
VOLUME control ⑬
∩ (headphones) jack (stereo minijack)
When the headphones are connected to the jack, the sound does not come out from the speakers.
▲ OPEN/CLOSE button (for disc tray)
Disc tray

Radio Cassette-Corder and Clock Section



Telescopic antenna for FM ㉔
Keep the handle down when you use the antenna. The antenna for AM is in the unit.

Cassette holders
Deck A/B

EJECT lever for Deck B

EJECT lever for Deck A

RADIO indicator

TAPE indicator

SLEEP button ㊻

CLOCK button ⑪

TIMER button ㊶ ㊷ ㊸

STANDBY button ㊶ ㊸

BAND button ㉔ ㉘

PRESET buttons ㉗

TUNING/TIME SET buttons ⑪ ㉔ ㊺

FM MODE switch ㉔

SEND and MEMORY buttons ⑪ ㉑ ㉒ ㊹

DUBBING buttons ㉝ ㊵
NORM (normal)
HIGH

Tape operation buttons
◁REV (play for reverse side)
FWD ▷ (play for upper side)
□ (stop)
◀◀/▶▶ (leftward/rightward fast winding)/ AMS (selection)
●/❚❚ record/pause during recording
Pause cannot be done during playback.
REC (record) MUTE

Note

Make sure the **REC** indication is not displayed in the display window before you press the ◁REV button or the FWD ▷ button. If the **REC** indication is displayed, the unit will start recording and what was previously recorded on the tape will be lost.

FM ST (stereo) indicator ㉔
When FM broadcasting is received, it lights up.

DOLBY NR (B type Noise Reduction) switch ㉘ ㉝ ㊴

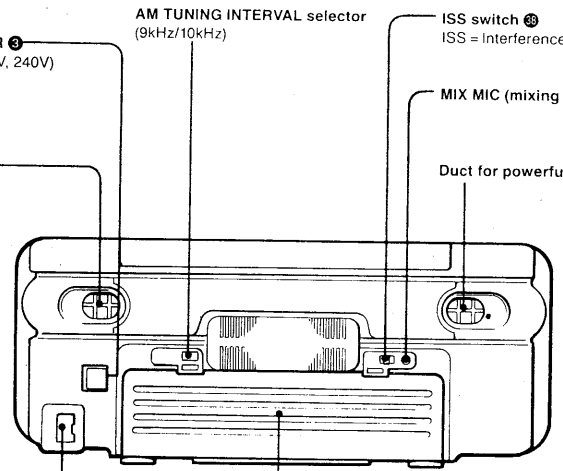
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ⧈⧈ are the trademarks of Dolby Laboratories Licensing Corporation.

COUNTER RESET button ㉙

DIR (tape transport direction) MODE button
Recording the CD sound ㉜ ㊱
Recording other sound sources ㊴
Tape playback ㉘
Relay tape playback ㊵

DECK A/B selection button
To select the desired deck to operate

Rear Panel



VOLTAGE SELECTOR ❸
(100V-110V, 120V, 220V, 240V)

AM TUNING INTERVAL selector
(9kHz/10kHz)

ISS switch ㊴
ISS = Interference Suppress Switch

MIX MIC (mixing microphone) jack ㊽

Duct for powerful bass sound

Duct for powerful bass sound

AC IN (AC power input) jack ❾

Battery compartment ❾
(for clock/timer/memory and for the unit itself)

Note on the AM tuning interval

Check that the AM TUNING INTERVAL selector is correctly set to the frequency allocation system of your country. The following are the areas with 9kHz or 10kHz tuning interval:

9kHz	Japan, Korea, Europe, Southeast Asian countries
10kHz	U.S.A., Canada, Central and South American countries

The AM tuning interval is preset to 9kHz at the factory.

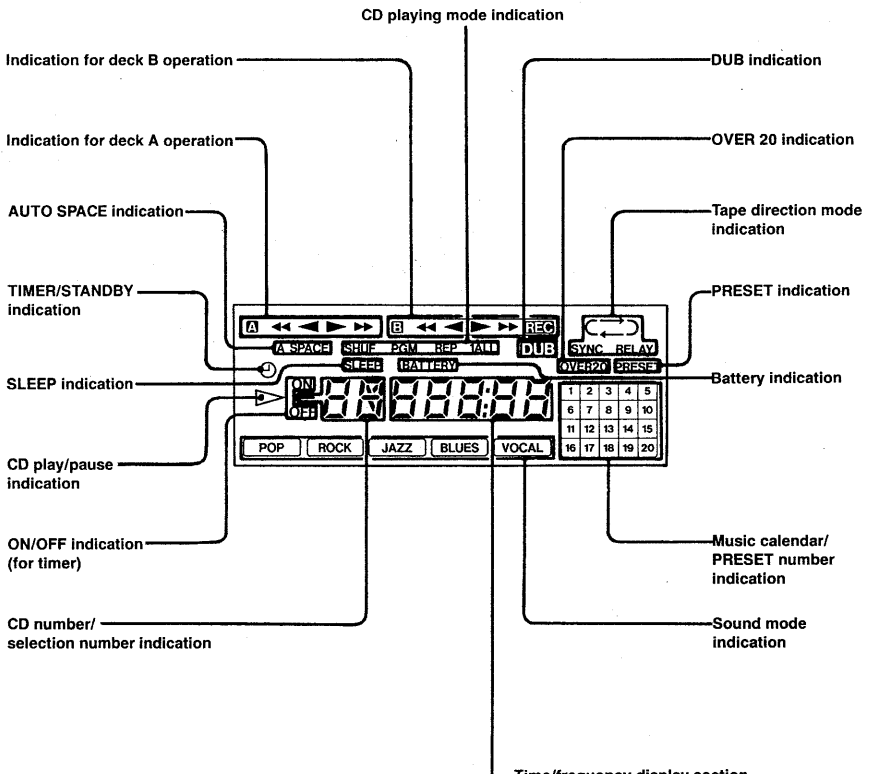
How to change interval

1 Turn off the power by pressing the POWER button.
2 Disconnect the AC power cord and remove the eight size D (R20) batteries and four size AA (R6) batteries.
3 Press the POWER button to make the time indication on the display window disappear.
4 Change the position of the selector. Then install the batteries and connect the AC power cord again.

When the AM turning interval is changed, all the memories, the current time and timer setting will be cleared.

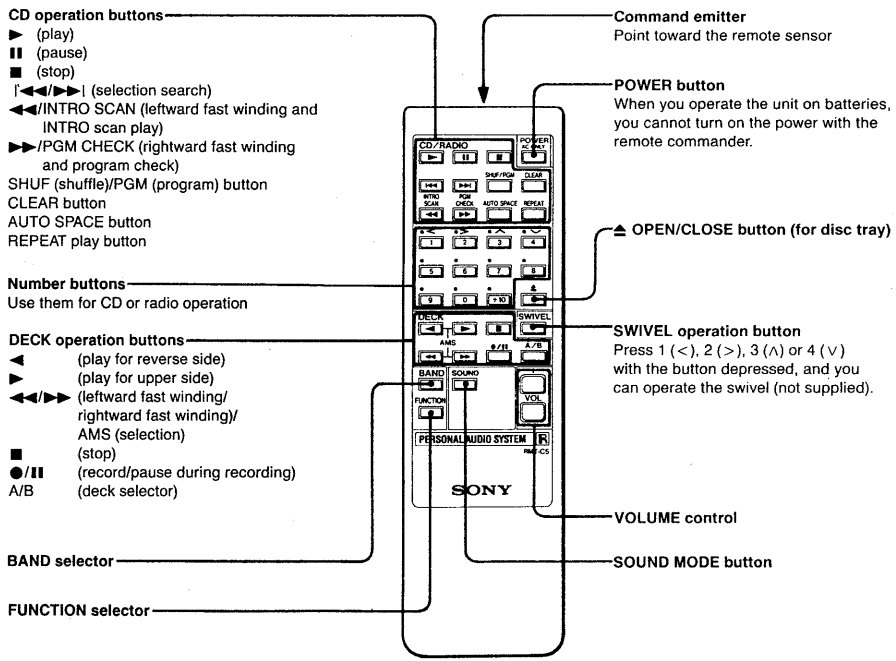
Parts Identification

Display Section



Clock display	During CD playing	During radio reception
AM/PM indication appears here.	Playing order/playing time/ remaining time (minute)	FM/AM indication appears here.
Time indication (hour/minute)	Playing time/remaining time (second)	Frequency response

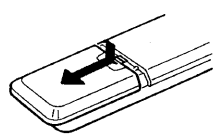
Remote Commander



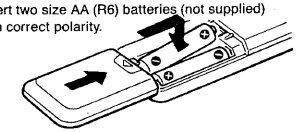
Note on the remote commander
To avoid malfunction, keep the commander away from direct sunlight or strong illumination.

How to install batteries

1



2 Insert two size AA (R6) batteries (not supplied) with correct polarity.



When to replace batteries
Battery life under normal use is about 6 months. When you cannot operate the unit with the commander from the distance where you used to operate, replace both batteries with new ones.

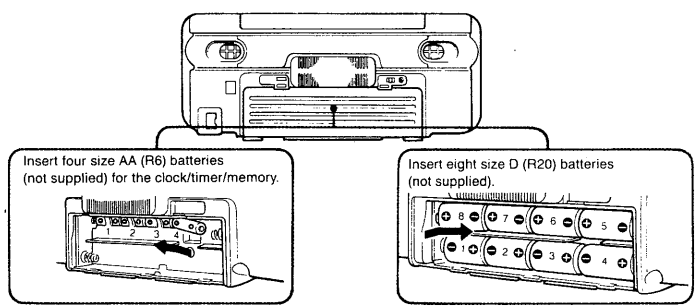
See "Notes on batteries" on page 10.

Power Sources

Preparation: Insert batteries for clock/timer/memory.
You can use the unit either on house current, or on batteries. In either case, be sure to insert four size AA (R6) batteries (not supplied) for the clock/timer/memory. As soon as you insert the batteries, set the clock. (See page ⓫.)

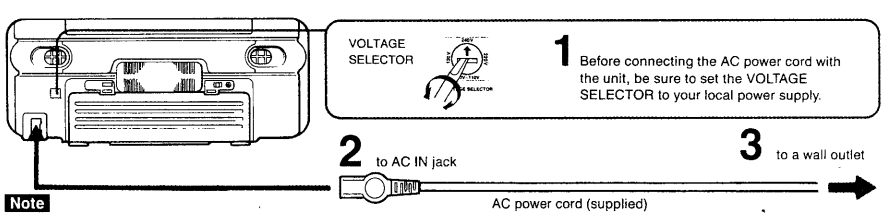
Notes
- When you insert or replace batteries, remove the disc from the unit. The disc may fall out and be damaged.
- When you operate the unit on batteries, be sure to disconnect the AC power cord from the unit. The unit cannot be operated on the internal batteries when the AC power cord is connected to the unit.

Batteries



When you use the unit on batteries, the back light does not go on.

House Current


VOLTAGE SELECTOR
1 Before connecting the AC power cord with the unit, be sure to set the VOLTAGE SELECTOR to your local power supply.
2 to AC IN jack
3 to a wall outlet
AC power cord (supplied)

Note
Be sure to use the supplied AC power cord.

When to replace batteries
When the batteries become weak, the following symptoms appear. Replace all the batteries with new ones. Be sure to connect the AC power cord to the unit and to the wall outlet and turn the power on before you remove the batteries so that the memory for the CD and radio will not be erased.
- Batteries for the unit itself: The OPR/BATT indicator becomes faint or the power may turn off automatically.
- Batteries for the clock/timer/memory operation: the "BATTERY" indication appears in the display window. The batteries normally last about six months, but they may last longer when you use the unit on house current.

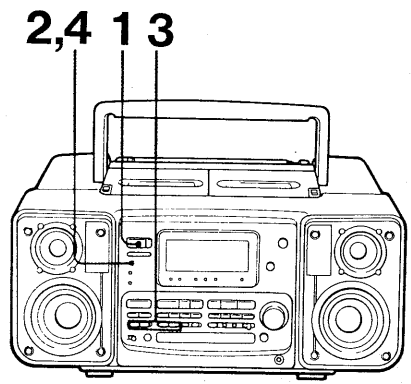
Notes on batteries
- Insert batteries with correct polarity.
- Do not use old batteries with new ones or different types of batteries together.
- The batteries cannot be charged.
- When the batteries will not be used for an extended period of time, remove them.
- If battery leakage or corrosion has occurred, clean the contaminated parts in the battery compartment with a soft cloth and replace the old batteries with new ones.

For critical recordings or disc playing
Operating the unit on house current is recommended.

Note on the AC plug adaptor
Use it if the plug of the AC power cord does not match the outlet.

Setting the Clock

Insert four size AA (R6) batteries for the clock/timer/memory in the battery compartment, and connect the supplied power cord to the unit or insert eight size D (R20) batteries.

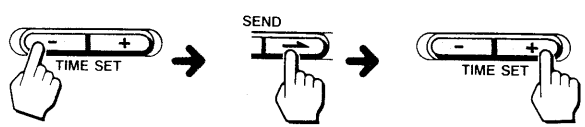


1 Press the power button.

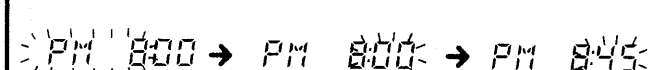
2 Keep pressing for about 2 seconds until "AM" or "PM" and the hour digits flash.

3 Set the hour and minute by pressing the TIME SET button and the SEND button.

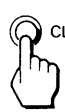
Example: To set to 8:45 p.m.



When you keep pressing the "+" of the TIME SET button, the digits change as follows: 7, 8, 9, 10, 20, 30, 40 . . .



4 Press the CLOCK button again.



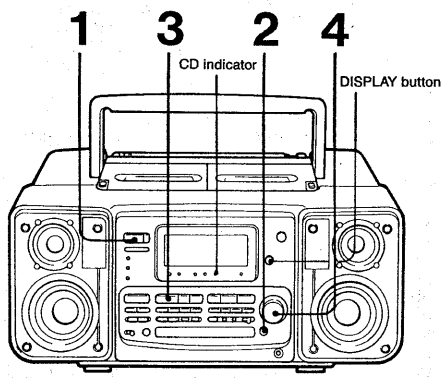
The clock starts from 00 second.

The clock employs the 12-hour system.
AM 12:00 = midnight
PM 12:00 = noon

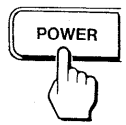
The clock functions correctly even when the power switch is turned off and only the ":" indication is displayed.

Playing Discs

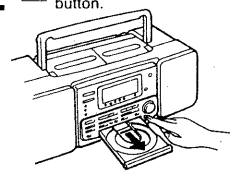
You can operate the unit with the supplied remote commander.
You can play an 8 cm (3-inch) CD without an adaptor.



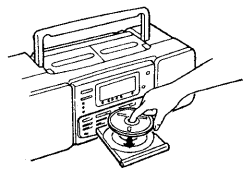
1 Press the POWER button.



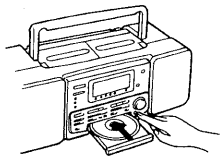
2 1 Press the ⏏ OPEN/CLOSE button.



2 With the labeled surface facing up.

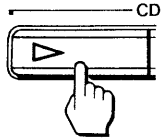


3 Press the ⏏ OPEN/CLOSE button.

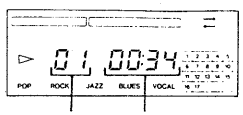


3 Press the ▷ button.

The play starts from the beginning of the disc.

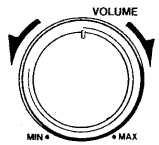


The CD indicator lights.



Selection No. being played. Elapsed playing time.

4 Adjust the volume.



To stop playing the CD

	The button to be pressed	
	Unit	Remote commander
Pause for a moment	⏸	⏸
Resume play after pause	⏸	⏸
Stop play	□	■
Remove the disc	First, □, then ⏏ OPEN/CLOSE*	First ■, then ⏏

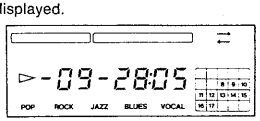
*Press the ⏏ OPEN/CLOSE button after making sure the disc has stopped.

To Display the Remaining Time

Press the DISPLAY button during play.
Press the DISPLAY button once, and the remaining time of the selection is displayed.

7 minutes and 5 seconds are left until the 8th selection finishes.

Press the DISPLAY button once more, and the remaining time of the disc and the remaining selection numbers are displayed.



9 selections and 28 minutes and 5 seconds are left until the disc finishes.

Note

During shuffle or repeat playing, the remaining time of the disc cannot be displayed.

Information Display

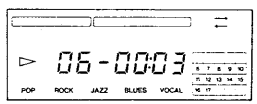
The numbers, which appear during pause or between selections, indicate the following:

While in pause

The player is in pause at 1 minute and 17 seconds from the beginning of the 5th selection.

Between selections

The remaining time before the next selection is displayed.



3 seconds are left until the 6th selection starts.

When you have finished listening
Press the POWER button.

Note

- Since the CD system offers a wide dynamic range, high level peak inputs are recorded with high fidelity, and the noise level is very low. Do not turn up the volume while listening to a portion with very low inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.
- When you press the POWER button, the FUNCTION button, the ⏏ OPEN/CLOSE button, the BAND button, the ◁ REV button or the FWD ▷ button, the unit functions after the disc has stopped.

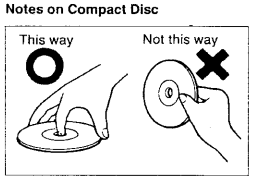
Note

- If the disc is played near a TV or a radio, noise may occur on the TV or radio.
- If there is no disc in the disc tray, the following indication appears in the display window after several seconds.

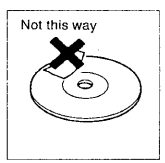
- Up to 20 selections can be displayed in the music calendar.
- If the disc has more than 21 selections, "OVER 20" appears in the display window.

- The remaining time of the selection from the 21st selection appears as "____:__".
- Elapsed playing time is displayed during play.
- To display the total number of the selections and the total playing time, press DISPLAY in the stop mode.

Notes on Compact Disc



Handle the disc by its edge, and to keep the disc clean, do not touch the surface.



Do not stick paper or tape or write anything on the surface.

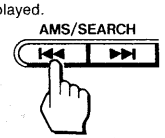
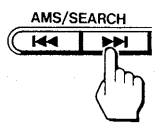
Before playing, clean the disc with a CD cleaner (not supplied).
Wipe the disc from the center out.

For maintenance of discs in detail, see page ⓭.

To Listen to the Desired Selections

To locate the beginning of a selection (AMS*)
Be sure the PGM or the SHUF indication is not displayed in the display window. If either indication is displayed, press the □ (stop) button to clear the indication.

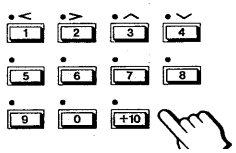
Press the I◀◀ or the ▶▶I button during play or in pause.

To locate the beginning of the selection being played.	To locate the beginning of the next selection.
	

*AMS: Automatic Music Sensor

- **During play**
  When you press the I◀◀ button once during play, the beginning of the current selection is located. When you press the ▶▶I button once during play, the beginning of the next selection is located.
- **In pause**
  When you press the I◀◀ button once in pause, the beginning of the selection in pause is located and the disc pauses. When you press the ▶▶I button once in pause, the beginning of the next selection is located and the disc pauses.
- When you keep pressing the I◀◀ or the ▶▶I button for more than one second during play or pause, you can review or advance disc playing rapidly.

To select the desired selection directly
Press the number of the desired selection on the remote commander, and the play starts immediately.



When a selection number is higher than 10, press the +10 button first, then the number buttons "1" to "0".

Example:

To play from the 10th selection.		To play from the 30th selection.		To play from the 33th selection.	
	Display		Display		Display
Press +10	1 -	Press +10	1 -	Press +10	1 -
Press 0	10	Press +10	2 -	Press +10	2 -
		Press +10	3 -	Press +10	3 -
		Press 0	30	Press 3	33

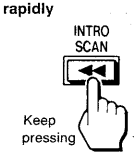
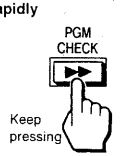
To Search for a Particular Point in a Selection (Search)

To review or to advance rapidly
Press the AMS/SEARCH (I◀◀/▶▶I) button on the unit or the ◀◀/▶▶ button on the remote commander to review or to advance disc playing rapidly.

Unit

To review disc playing rapidly	To advance disc playing rapidly

Remote commander

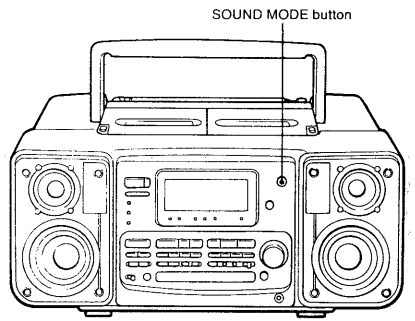
To review disc playing rapidly	To advance disc playing rapidly
	

Release the AMS/SEARCH (I◀◀/▶▶I) button on the unit or the ◀◀/▶▶ button on the remote commander at the desired point, located by monitoring the high-speed sound.

In the pause mode, you can search rapidly by pressing the AMS/SEARCH (I◀◀/▶▶I) button on the unit or the ◀◀/▶▶ button on the remote commander. However, since you cannot hear the sound, observe the time counter instead to locate the desired point.

Adjusting Sound

Five kinds of sound styles are stored in the unit. Press the SOUND MODE button, and you can enjoy the desired sound. Each time you press the button, the indication in the display window changes as follows: POP → ROCK → JAZZ → BLUES → VOCAL → normal mode. Select your desired sound, observing the display window. The SOUND MODE button lights except for the normal mode.



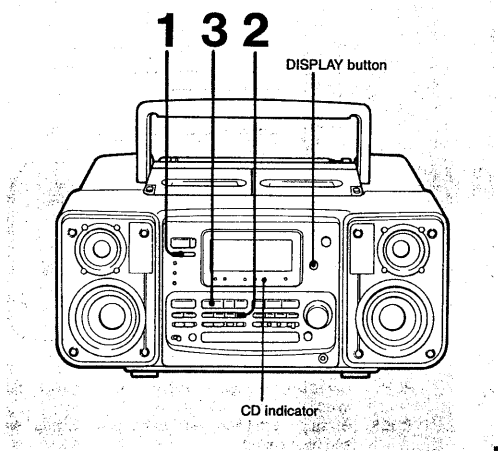
POP	Gives a light, bright sound, emphasizing high and middle range sounds.
ROCK	Gives powerful and clear sound, emphasizing low and high sound.
JAZZ	Gives heavy sound, emphasizing bass sound.
BLUES	Gives powerful and rich sound, emphasizing the bass sound a little higher than "JAZZ", and middle range sound.
VOCAL	Provides more presence of vocals, emphasizing middle range sound.

It is recommended to set to the normal mode to listen to selections with a dynamic range, such as classical music.

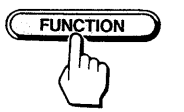
Various Disc Playing Modes

Each time you press the SHUF/PGM button
The playing mode changes in sequence as indicated in the display window: SHUF (shuffle play) → PGM (program play) normal play. Select the desired mode by observing the display window.

To Play Selections in a Random Order — Shuffle Play

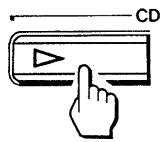


1 **Press the FUNCTION button until the CD indicator lights up.**



2 **Press the SHUF/PGM button until the SHUF indication appears.**

3 **Press the ▷ button with "CD".**

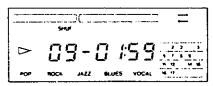


When a selection finishes playing, its number disappears from the music calendar.

To stop shuffle play
Press the □ (stop) button.
When all the shuffle play is finished, the player stops.

To release shuffle play and to return to normal play
Press the SHUF/PGM button twice until the SHUF indication disappears from the display window.
Normal play begins from the selection being palyed.

To display the remaining time of the selection being played
Press the DISPLAY button once.



1 minute and 59 seconds are left until the end of the 9th selection.

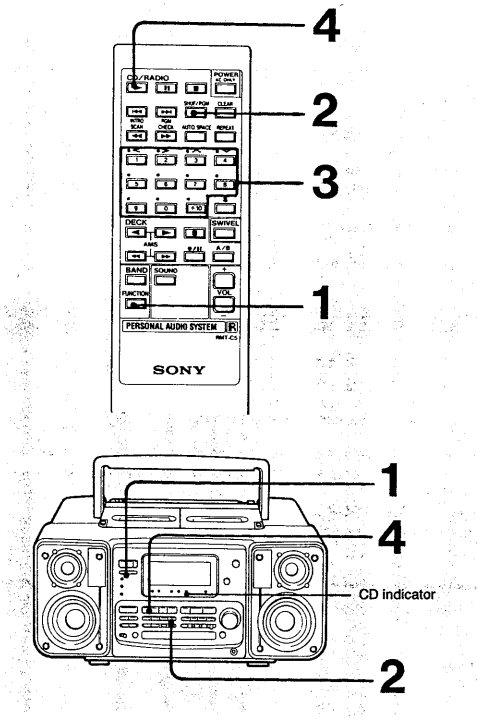
When you press the DISPLAY button again, the normal indication is displayed.
From the 21st selection, the remaining time will be displayed as "— — : — —".

When you press the SHUF/PGM button during normal play
Shuffle play begins from the selection being played.

Note
You cannot display the remaining time of the disc during shuffle play.

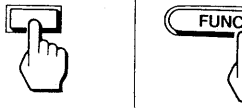
What does [shuffle] mean?
This indication means the unit is shuffling the selections.

To Play the Desired Selections in a Random Order — Delete Shuffle Play (You can do this with the supplied remote commander)

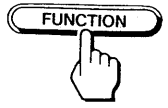


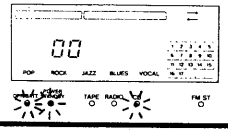
1 Press the FUNCTION button on the remote commander or on the unit until the CD indicator lights.

FUNCTION



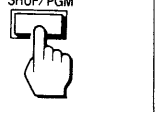
You can use the button on the unit.





2 Press the SHUF/PGM button on the remote commander or on the unit until the SHUF indication appears.

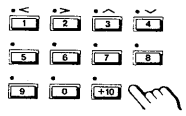
SHUF/PGM



You can use the button on the unit.

3 Press the number buttons of the selections not desired.

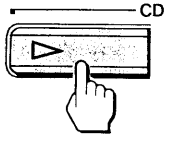
The OFF indication appears in the display window and the selection number in the music calendar disappears. When you press the selection number again, the On indication appears in the display window and the selection number reappears in the music calendar.



The number pressed disappears.

4 Press the ▶ button.

You can use the buttons on the unit.



When the Delete Shuffle Play is finished
The deleted selection number in the music calendar reappears, and all the selections are ready to be played. When you press the ▷ button, shuffle play of all the selections begins.

When you press number buttons during shuffle play
The selection of the number pressed is deleted, but the selection being played is not deleted.

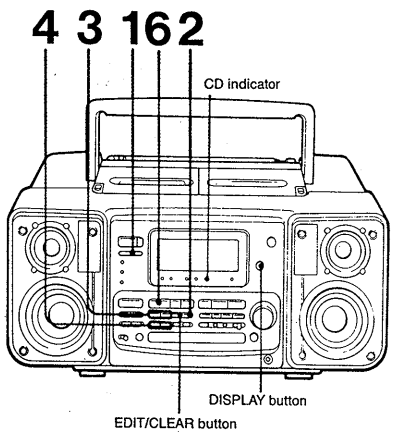
To erase from the 11th selection
Press the +10 button first and then the number buttons. (See page ⓳.)

When you want to play the deleted or finished selections
Press again the number of the deleted or finished selections.

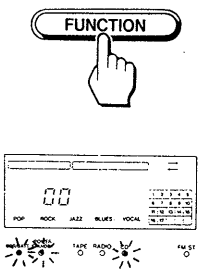
Various Disc Playing Modes

To Play Selections in the Desired Order — Program Play

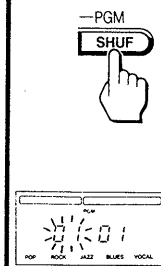
Unit



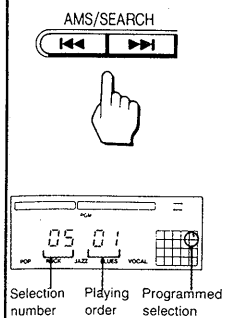
1 Press the FUNCTION button until the CD indicator lights up.



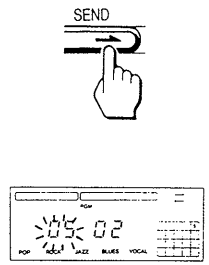
2 Press the SHUF/PGM button until the PGM indication appears.



3 Select the desired selection by pressing the AMS/SEARCH (I◀◀/▶▶I) button.

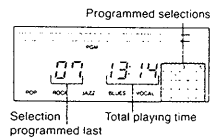


4 Press " ➘ " of the SEND button.



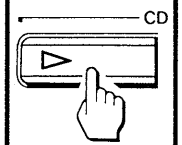
5 Repeat steps 3 and 4.
The selections are programmed in the order the numbers are pressed.

To check the total playing time of the selections programmed
After step 3, press the DISPLAY button. The total playing time appears instead of the playing order.



When you program a PAUSE in the programmed selections (see page ⓬), the playing time after the PAUSE appears. To return to the normal play, press the DISPLAY button.

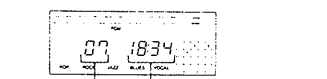
6 Press the ▷ button.



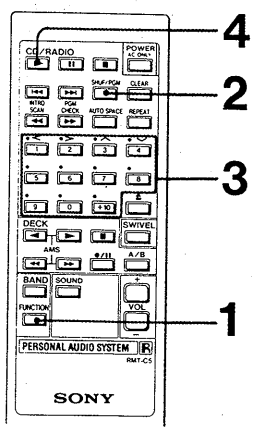
The selection programmed first begins to play.
The numbers of the finished selections disappear from the music calendar.

Note

If you press the DISPLAY button after you have finished Step 4, the unit will not display the total playing time of the programmed selections. Instead, it shows the total of the programmed selections and the last selection together.



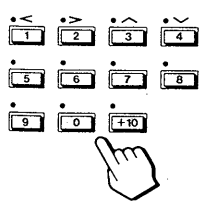
Remote commander



1 Press the FUNCTION button until the CD indicator lights up.

2 Press the SHUF/PGM button until the PGM indication appears.

3 Press the number buttons in the desired order.
The selections are programmed in the order the numbers are pressed.



Up to 21 selections can be programmed.

4 Press the ▶ button.

The selection programmed first begins to play.
The numbers of the finished selections disappear from the music calendar.

To stop the program play
Press the □ (stop) button.

To reprogram the selections from the beginning
1 Before play starts, press the □ (stop) button once.
During play, press the □ (stop) button twice.
2 Repeat the steps from the beginning.

To reprogram the selections while programming (only before play starts)
1 Press the SEND (➘ / ➘) button until the number not desired flashes.
2 Press the EDIT/CLEAR button.
The flashing number and all the following programmed numbers disappear.
3 Press " ➘ " of the SEND button.
Reprogram selections.

To release program play and return to normal play
Press the SHUF/PGM until the PGM indication disappears from the display window.

When the programmed selections have finished
The selection numbers in the music calendar disappear one by one, but when the last selection has finished, the programmed selections are displayed again.
By pressing the ▷ button, you can repeat the same program play as many times as you wish.

To program a pause

Remote commander

Press the ❚❚ button where you want to program a pause.

Unit

1 Press the ❚❚ button where you want to program a pause.
2 Press "I◀◀" or "▶▶I" of the AMS/SEARCH button.
3 Press "▁▶" of the SEND button.
A pause counts as one selection.

A pause has been programmed as the 4th selection.
The player pauses when it comes to the position where a pause is programmed. To resume playing, press the ❚❚ button.

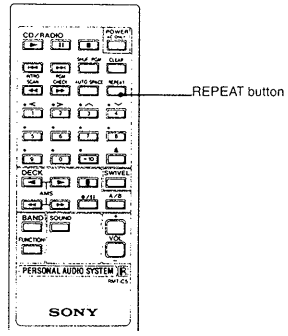
To check programmed selections
During programming, press the SEND (◀▁/▁▶) button on the unit or the PGM CHECK (▶▶) button on the remote commander. With each press, the selections appear in the programmed order.

Even when the disc tray is open
You can program selections while the disc tray is open.

The selections programmed are erased in the following cases:
- When you press the □ (stop) button twice during the program play.
- When you press the □ (stop) button in the stop mode.
- When you open the disc tray.

To Repeat Selections — Repeat Play

To select the desired repeat mode
With each press of the REPEAT button, the repeat mode changes in sequence: REP (repeat) 1 → REP (repeat) ALL → normal play. Select the desired mode, observing the display window.



Make sure neither PGM nor SHUF indication is displayed before proceeding with these steps. If either is displayed, press the □ (stop) button.

Repeat Mode	Steps	
To repeat one selection (Repeat 1)	Press the REPEAT button to display the REP 1 indication.	→ Choose the desired selection with the number buttons.
To repeat all the selections (Repeat all)	Press the REPEAT button to display the REP ALL indication.	→ Press the ▶ button.
To repeat the desired selections in the desired order (Program repeat)	Program play starts. (See page ⓲.)	→ Press the REPEAT button.
To repeat selections in random order (Shuffle repeat)	Shuffle play starts. (See page ⓲.)	→ Press the REPEAT button.

To stop the repeat play
Press the ■ button.

To release the repeat play
Press the REPEAT button until the REP indication disappears from the display window.

Note
During the repeat play, the remaining time of the disc cannot be displayed.

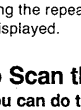
To repeat the shuffle play
The order of the selections in the shuffle play changes every time you repeat the shuffle play.

When you start the repeat play during the delete shuffle play
All the selections will be played in the shuffle mode after the delete shuffle play has finished.

To Scan the Beginning of the Selections
(You can do this with the supplied remote commander only.)

Press the INTRO SCAN button while the CD player is stopped.

INTRO SCAN



Intro Scan play starts immediately.

You can scan the first 10 seconds of all the selections.

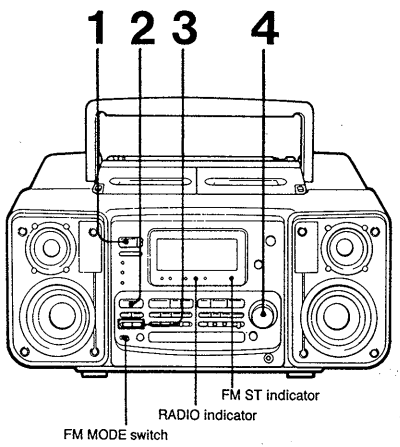
You can scan the beginning of the selections during normal play, shuffle play, delete shuffle play and program play.

To release the Intro Scan play
Press any button for disc play.

Note
Even if a pause is programmed in program play, the Intro Scan play skips the pause.

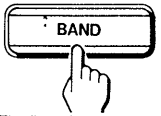
Listening to the Radio (You can do this with the supplied remote commander)

Manual Tuning

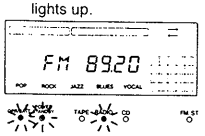


1 Press the POWER button.

2 Select the desired band, FM or AM.



The RADIO indicator lights up.

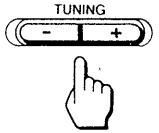


With each press of the button, the band changes.

Desired band	Band indication
FM	FM
AM	AM

3 Tune in the desired station.

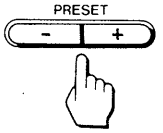
Method 1



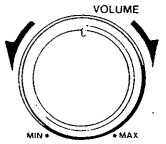
Method 2

When the stations are preset.*

*For preset tuning, see page 28.



4 Adjust the volume.



After listening

Press the power button to turn off the radio.

When the unit receives FM stereo programs

The FM ST (stereo) indicator lights up. When you set the FM MODE switch to MONO, the indicator goes off.

Band	Broadcast	Sound from the speaker or the headphones	Position of the switch
FM	Stereo	Stereo	ST
		Monaural	MONO

When there is much noise while receiving FM stereo programs

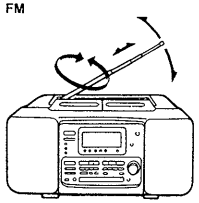
Set the FM MODE switch to MONO. Though this eliminates the stereo effect, the noise will be reduced.

Auto Scan

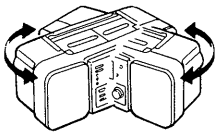
Keep pressing the TUNING button until the digits in the display window begin to change. The unit automatically tunes in a station in good receiving condition and the digits stop changing.

To improve the receiving condition

FM



AM



Note

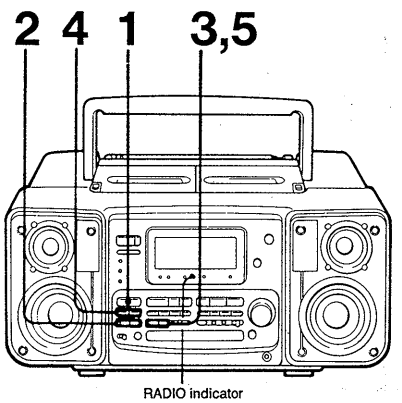
- When you listen to an AM program near a TV, noise may be heard in the AM program. When you listen to an FM program near a TV with an indoor antenna, the picture of the TV may become unstable. In such cases, move the unit away from the TV.
- When you operate the supplied remote commander while listening to an AM program, noise may be heard.
- When the received FM stereo signal is too weak, the FM ST (stereo) indicator may light up. Set the FM MODE switch to MONO.

To enjoy programs with the best reception

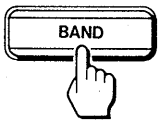
We recommend that you check the radio frequencies by referring to the programs listed in newspapers, etc.

Preset Tuning

Once you preset the stations, you can listen to the desired station just by pressing the PRESET button on the unit or the number buttons on the remote commander.

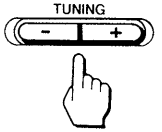


1 Select the desired band, FM or AM.

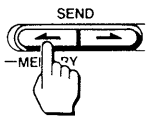


The RADIO indicator lights up.

2 Tune in the desired station.

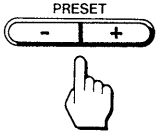


3 Keep pressing the SEND/MEMORY button for about 2 seconds.

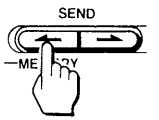


The PRESET indication and a number in the music calendar flash.

4 Select the desired preset number by pressing the PRESET button.



5 Press the SEND/MEMORY button.

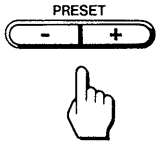


A preset number is displayed in the music calendar.

To tune in the preset station

Unit

Select the desired number by pressing "–" or "+" of the PRESET button.



Remote commander

To tune in the stations with the preset numbers 1 to 9

Press the number button of the desired preset number.

To tune in the stations with the preset numbers 10 to 12

1 Press the +10 button.

10, 11 and 12 flash in the music calendar.

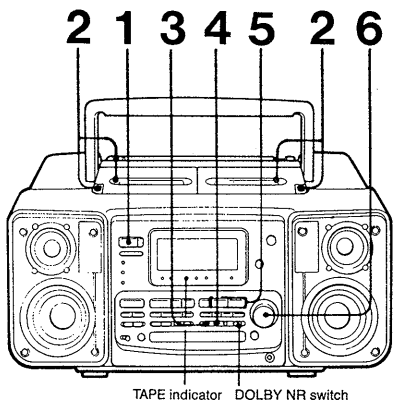
2 When you want to tune in the station:

With the preset number	The number button to be pressed
10	0
11	1
12	2

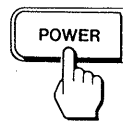
Notes on the storing of stations

- You can preset up to 24 stations, 12 for each AM and FM band.
- When you enter a new station on a preset number, the previous station will be erased automatically. The only way to erase a station from the memory is to store a new one in its place.

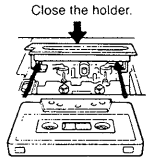
Playing Back Tapes (Either deck can be used. Deck A is for playing back only.) (You can do this with the supplied remote commander.)



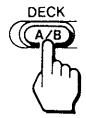
1 Press the POWER button.



2 Insert a recorded tape.



3 Press the DECK A/B button to display the desired tape deck indication in the display window if both decks have cassettes.



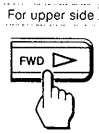
If only one deck has a cassette inserted, you need not press this button.

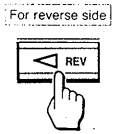
4 Press the DIR MODE button to select the desired direction of the tape. (See below.)

5 Press the FWD ▷ or the ◁ REV button.

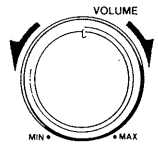
Note

Make sure the REC indication is not displayed in the display window.





6 Adjust the volume.



To stop

Select the deck you are listening to with the DECK A/B button, and press the ■ button. A pause cannot be made during playback.

To remove a cassette

Pull the EJECT lever for the deck with the cassette inside.

After listening

Press the POWER button.

To wind a cassette rapidly in the forward or reverse direction, press the following buttons:

	Wind rapidly in forward direction	Wind rapidly in reverse direction
Upper side	▶▶	◀◀
Reverse side	◀◀	▶▶

During the rapid playback or rewinding, the ◀◀ or ▶▶ indication appears in the display window.

Note on the TAPE operation buttons

Both deck A and deck B can be operated with the same tape operation buttons.
The deck to be operated is selected automatically when a cassette is inserted.

	Displayed indication and operable deck
Neither deck has a cassette.	No indication. Neither deck is operable.
Only one deck has a cassette.	The deck with a cassette inside.
Both decks have cassettes.	The deck with a cassette inserted later.

When both decks have cassettes, select the desired deck with the DECK A/B button.

To play back a cassette using the DOLBY B Noise Reduction system

Set the DOLBY NR switch to ON. When you play back a cassette recorded without the DOLBY B Noise Reduction system, be sure to set the switch to OFF.

When both deck A and deck B are in the playback mode

Both decks operate, but only the cassette in deck B is audible.

To select playback mode

Select the mode by pressing the DIR MODE button.

	Direction mode indication
To play back one side of a cassette	⇉
To play back both sides of a cassette from the upper side to the reverse side of a cassette	⇉ RELAY*
To play back both sides of a cassette continuously	⊂⇉

*When both decks have cassettes, both cassettes can be played back in succession. (Relay play)
For relay play, see page 30.

Notes on the tape counter

- One digit advances as the indication ◯ (◯) makes a round.
- The digits move back while the reverse side of a cassette is being played back or recorded. (◁)
- If you write down the digits of the tape counter or reset the counter with the COUNTER RESET button before recording, it will help you when you want to search for the beginning of the desired selection.

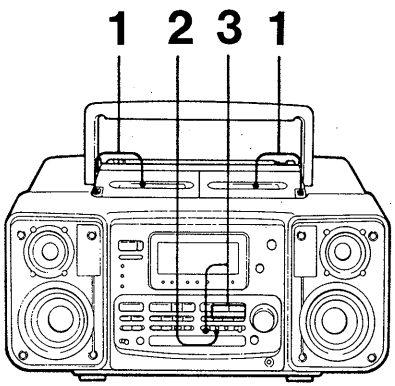
ATS (Automatic Tape Selector)

When a cassette is inserted into the cassette holder, the unit automatically identifies and adjusts the tape type with the ATS (Automatic Tape Selector) system by selecting the blank space in cassettes.

Usable tape type

Tape type	Playback	Recording
TYPE I (normal)	Can be used	Can be used
TYPE II (CrO_2)	Can be used	Can be used
TYPE IV (metal)	Can be used	Can be used

To Play Back Both Decks in Succession — Relay Play (from deck A to deck B only)



1 Insert cassettes in both decks.

2 Press the DIR MODE button to display the ⇉ indication.

The RELAY indication is displayed

3 Select deck A with the DECK A/B button, and press a tape playback button.

Button to be pressed	Order of playback	
FWD ▷	Deck A: upper side → reverse side	Deck B: upper side → reverse side
◁ REV	Deck A: reverse side	Deck B: upper side → reverse side

When the reverse side of the deck B has been played back, the playback stops and will not repeat.

To stop relay play
Select the deck you are listening to with the DECK A/B button, and press the □ (stop) button.

To Locate the Beginning of a Particular Selection — AMS* (You can do this with the supplied remote commander)

During playback, press the appropriate button.

The cassette is wound rapidly in the forward or reverse direction, and playback will start automatically when the beginning of the selection is reached.

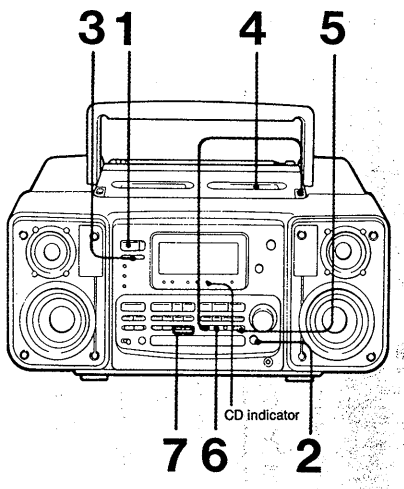
	During playback of upper side ▶	During playback of reverse side ◀
To locate a selection ahead	▶▶	◀◀
To repeat the selection being played	◀◀	▶▶

Notes on AMS*

- When you make a tape, so that the AMS will function correctly, we recommend recording a 4-second blank space between selections by pressing the REC MUTE button. (See page 33.)
- If very low sounds, such as "pianissimo", last for several seconds, the unit may treat it as a blank.
- If you start AMS from a silent part, the beginning of the selection might not be located.
- If you press the FUNCTION button while the AMS is functioning, the deck stops.
- While one deck is used with AMS, we recommend stopping the other deck. If you operate the other deck, AMS might not function properly.

*AMS: The abbreviation of Automatic Music Sensor. This function locates the beginning of selections during fast winding by detecting the blank space between selections.

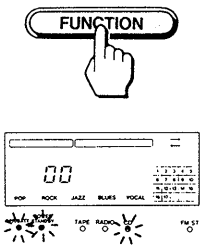
Recording CD Sound (with deck B)



1 Press the POWER button.

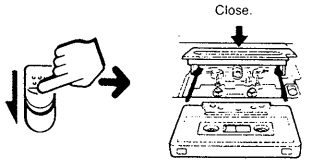
2 Place a disc on the disc tray. (See page ⓲.)

3 Press the FUNCTION button to light up the CD indicator.



4 Insert a cassette in deck B with the side to be recorded up.

The upper side is to be recorded.



Use a TYPE I (normal), a TYPE II (CrO_2) or TYPE IV (metal) tape.

5 Set the DOLBY NR switch to ON when you want to record using the DOLBY B Noise Reduction system.

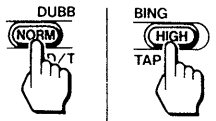
6 Press the DIR MODE button to select the desired direction of the tape.

	Displayed indication
To record on both sides of a cassette	⇄ or ⇄ SYNC
To record on one side of a cassette	→

* For ⇄ SYNC, see page ⓰ "To record throughout a cassette (CD synchronized reverse recording)

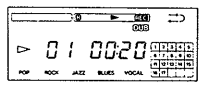
7 Press the DUBBING button.

Recording starts from the beginning of the disc. (CD synchronized start function)
The tape starts to record on the upper side first.



For normal speed recording: set to "NORM".

For high-speed recording: set to "HIGH".



To stop recording
Press the □ (stop) button on the CD player section.
The tape stops automatically.

When the CD finishes while recording
The deck stops automatically. (CD synchronized stop function)

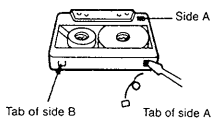
After recording
Press the POWER button.

The recording level is adjusted automatically.
The setting of the VOLUME control or the SOUND MODE button does not affect the recording level. During recording you can listen to the sound, adjust the volume of the speakers or headphones, or change the sound mode.

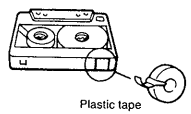
When you press the DISPLAY button*	What appears in the display window
Once	The remaining time of the selection being played
Twice	The remaining time of the disc and the selection number
Three times	The tape counter

To prevent accidental erasure

Break off the cassette tab of side A or B as illustrated.

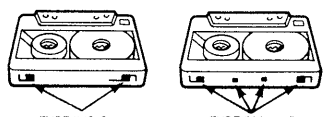


To reuse a cassette for recording, cover the broken tab slot.



Note

Take care not to cover the detector slots of the TYPE II (CrO_2) or the TYPE IV (metal) cassettes. If the slots are covered, the automatic tape selection system will not operate correctly.



Notes on recording

- With high-speed recording, you cannot use the DOLBY B Noise Reduction system. When you play back a tape recorded at high speed, set the DOLBY NR switch to Off.
- During recording, the buttons on the CD player section other than the □ (stop) button, the DISPLAY button and the □ (stop) button on the radio cassette-corder section cannot be operated. The remote commander cannot operate either.
- Use high-speed recording only for continuous recording.
- During recording, you cannot change the recording speed ("HIGH"/"NORM"). Set the recording speed before starting to record.

To record throughout a cassette (CD synchronized reverse recording)

Select the ⊂⇄⊃ SYNC indication with the DIR MODE button. When the upper side of the tape ends in the middle of a selection, the tape reverses automatically and rerecords the selection from the beginning.

To erase the recorded sounds

1 Press the FUNCTION button to light up the TAPE indicator.
2 Disconnect the microphone if connected to the MIX MIC jack.
3 Press the ●/❚❚ button, and press the FWD ▶ button or the ◀ REV button immediately.

To record programmed selection (Manual program edit)

To record on the upper side of the tape

1 Program selections with the unit, proceeding with the steps in "To Play Selections in the Desired Order". (See page ㉞.)
(If you program selections with the remote commander, you cannot display the total playing time.)
2 Press the DISPLAY button to check the total playing time of the programmed selections.
If the total playing time exceeds the tape length of one side, press the EDIT/CLEAR button to eliminate the selections which are over the tape length.
3 Set the tape direction mode to "⇄", and press "NORM" of the DUBBING button.

To record on both sides of the tape

1 Program selections on the upper side of a tape, proceeding with steps 1 and 2 above.
2 Program a pause by pressing the ❚❚ button and the ▶▶| button.
3 Press "▁▲" of the SEND button.
4 Program selections on the reverse side of the tape, proceeding with steps 1 and 2 above.
5 Set the tape direction mode to "⇄⊃", and press "NORM" of the DUBBING button.
6 When the recording of the upper side has finished, the recording of the reverse side begins automatically.

Note
When you record CD or tape sound, operating the unit on house current with the supplied power cord is recommended.

To Record a Blank Space on the Tape

To play from the beginning of the desired selection, a 4-second blank space is required between the selections.
Recording CD sound (You can do this with the supplied remote commander only.)
Press the AUTO SPACE button, and a 4-second blank space between the selections is automatically recorded on the tape.

Press the AUTO SPACE button again for normal recording.

Note
During high-speed recording, this auto space function does not operate.

Recording sources other than CD (see page ㉟).
During recording, press the REC MUTE button where you want to have a blank space. A 4-second blank space is automatically recorded on the tape.
The REC indication flashes (during record muting*). → About 4 seconds later, the ▶ indication or the ◀ indication flashes. → The tape operation enters the recording pause mode.

To resume recording
Press the ●/❚❚ button to release the pause mode.

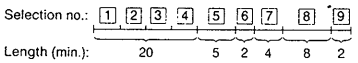
To make blank space more than 4 seconds long
During recording, keep the REC MUTE button pressed. 4 seconds later, the REC indication flashes rapidly.

*During record muting, sound comes out from the speakers or through the headphones, but it is not recorded.

Automatic Editing of the CD for Recording by Specifying the Tape Length

The unit automatically edits the selections on a disc according to the tape length. This is called automatic editing (AUTO EDIT).
Press the EDIT button. Each time you press the button, the editing mode changes in sequence as indicated in the display window: EDIT 1 → EDIT 2 → normal recording.
The recording length is up to 99 minutes and up to 20 selections can be edited.

There are two ways of editing.
Example: To record the disc below on a 46-minute tape (23 minutes for each side)



The unit edits selections without changing the original order. When the total playing time for one side exceeds the specified tape length, the remaining selections are recorded on the reverse side of the tape.

EDIT 1: In the example above, the playing time of the first 4 selections add up to 20 minutes leaving only 3 minutes. As the 5th selection is 5 minutes long, the 5th and succeeding selections are recorded on the reverse side of the tape.

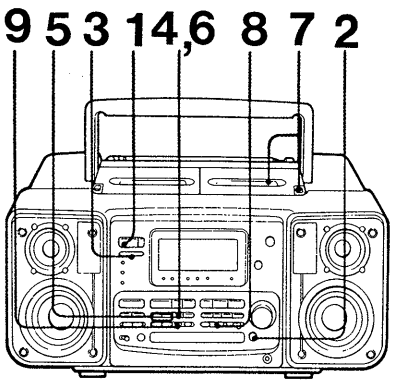
Upper side: the total playing time is 20 minutes.
Reverse side: the total playing time is 21 minutes.

The unit edits selections to best fit the tape length. As a result, the selection order may be changed.

EDIT 2: In the example above, the unit adds up the first 4 selections. Then, with 3 minutes left, it looks for a selection that fits into the remaining time and so selects the 6th.

Upper side: the total playing time is 22 minutes.
Reverse side: the total playing time is 19 minutes.

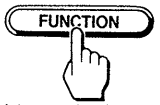
Notes
- Use a tape which is longer than the total playing time of the disc.
- When you press the EDIT button, the selection order stored for program play (see page ⓭) is erased.
- To record the selections which cannot be recorded on the specified tape after the selection has been programmed for automatic editing, press the SHUF/PGM button twice to display the PGM indication first and then record.
- When you open the disc tray, the selection order programmed for automatic editing is erased.

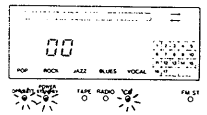


1 **Press the POWER button.**

2 **Place the disc on the disc tray.** (See page ⓮.)

3 **Press the FUNCTION button to light up the CD indicator.**

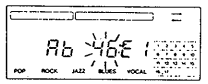




- Make sure the disc is not moving. During play, the edit function does not work.
- When the SHUF or the PGM indication is displayed in the display window, press the □ (stop) button once or twice until the indication disappears.

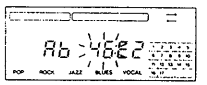
4 **Select EDIT 1 or EDIT 2.**

EDIT 1:



Press the EDIT/CLEAR button once to display the E 1 indication.

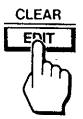
EDIT 2:



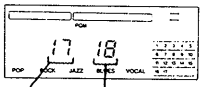
Press the EDIT/CLEAR button twice to display the E2 indication.

5 **Enter the total tape length by pressing the AMS/SEARCH (I◀◀/▶▶I) button.**
When you keep pressing the button, the number advances as follows: 7, 8, 9, 10, 20, 30, 40, etc.
When you use with the supplied remote commander, press the number buttons instead.

6 **Press the EDIT/CLEAR button.**



When the total playing time is shorter than the tape length, the PGM indication appears in the display window.



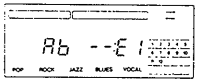
Selection number to be edited on both sides of the tape.

Programmed step number

The pause which occurs when the tape transport direction changes is counted as 1 step. So one is added.)

The selections have been programmed.
Proceed to Step 7.

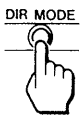
When the toal playing time is longer than the specified tape length (in the case of a 46-minute tape)



The indication above appears in the display window. Replace the tape with longer one, and repeat from Step 5.

7 **Insert a blank cassette into deck B.**
Use a TYPE I (normal), TYPE II (CrO_2) or TYPE IV (metal) tape.

8 **Press the DIR MODE button to display the ⇄ indication.**

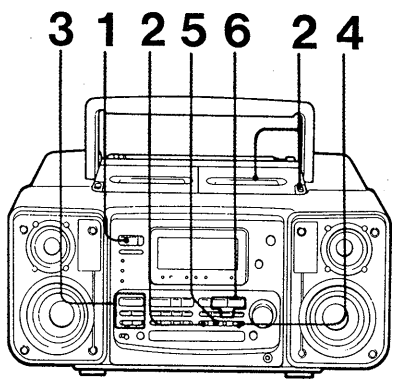


9 **Press "NORM" of the DUBBING button.**

To check the programmed selections
Press "◀◀/▶▶" of the SEND button on the unit or the ▶▶/PGM CHECK button on the remote commander. You can check the selections from the beginning one by one.
After pressing the DISPLAY button, press "◀◀/▶▶" of the SEND button on the unit or the ▶▶/PGM CHECK button on the remote commander, and the time added up on each side will be displayed.

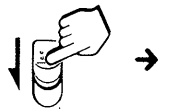
When all the selections have been recorded
Both the CD player and the cassette deck stop.

Recording Radio Sound (with deck B)



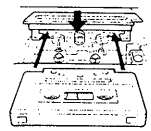
1 Press the POWER button.

2 Insert a blank cassette in deck B.



Use a TYPE I (normal), TYPE II (CrO_2) or TYPE IV (metal) tape.

Close the holder.



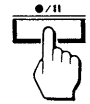
3 Tune in the desired station. (See page 23.)

4 Set the DOLBY NR switch to ON when you record using the DOLBY B Noise Reduction system.

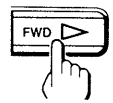
5 Select the desired tape transport direction by pressing the DIR MODE button.

	Displayed indication
To record on both sides of a cassette	⇄
To record on one side of a cassette	→

6 Press the ●/II button, and press the FWD ► button or the ◄ REV button immediately.



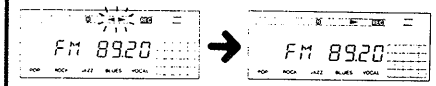
immediately press



To record from the upper side.

or

To record from the reverse side.



To stop recording
Press the □ (stop) button.

After recording
Press the POWER button.

The sound to be recorded is not affected by the setting of the VOLUME control or the SOUND MODE button.

To display the tape counter
Press the DISPLAY button.

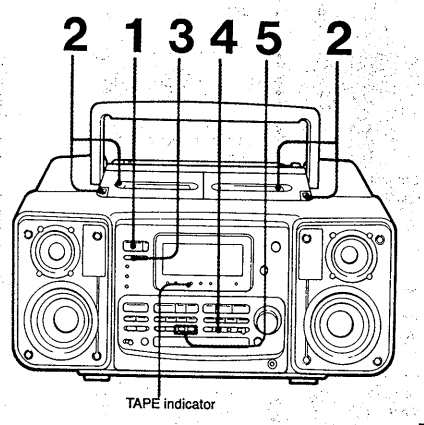
To reduce noise while recording AM
If a whistling noise is heard, set the ISS switch* to the position where the noise is reduced best. Normally set it to "2".

* ISS: Interference Suppress Switch

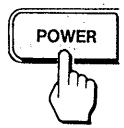
Note

- If you use the supplied remote commander near the unit while listening to an AM program, noise might be heard
- When you record radio sound, operating the unit on house current with the supplied power cord is recommended.

Tape Dubbing (from deck A to deck B)

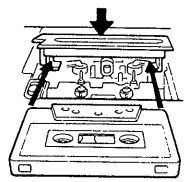


1 Press the POWER button.



2 Insert a recorded cassette into the deck A.

Close the holder.

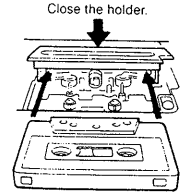


The upper side is to be played back.

Insert a blank cassette into deck B.

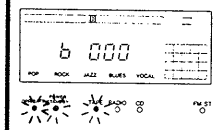
Use a TYPE I (normal), TYPE II (CrO_2) or TYPE IV (metal) tape.

Close the holder.



The upper side is to be recorded.

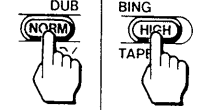
3 Press the FUNCTION button to light up the TAPE indicator.



4 Select a tape direction mode with the DIR MODE button.

	Displayed indication
To record on both sides of a cassette	⇄
To record on one side of a cassette	→

5 Press the DUBBING button.



For normal dubbing
NORM

For high-speed dubbing
HIGH

Playback of deck A and recording of deck B start.

To stop dubbing
Press the □ (stop) button. Deck A and deck B stop simultaneously.

During dubbing, if the DOLBY NR switch is set to ON
The DOLBY B Noise Reduction system operates for the sound played back, but not on the sound being recorded. A cassette recorded using the DOLBY B Noise Reduction system can be recorded on a blank cassette with the DOLBY B Noise Reduction effect.

Note

- During dubbing, do not press the FUNCTION button, the ▷ button on the CD player section nor the BAND button.
- During dubbing, the tape operation buttons except the □ (stop) button do not function.
- For dubbing, operating the unit on house current with the supplied power cord is recommended.
- When you press the DECK A/B button, the tape counter of the other deck is displayed.

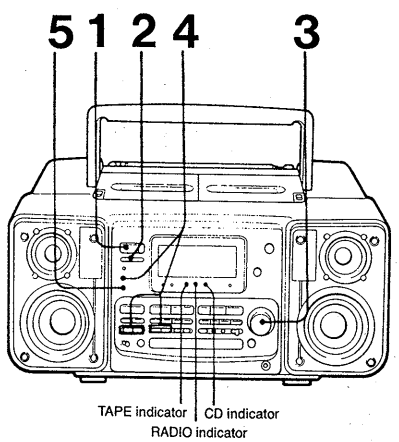
Using the Built-in Timer

Four size AA (R6) batteries, not supplied should be inserted.

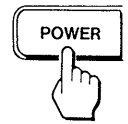
To Listen to the Desired Sound at the Desired Time

You can wake up to the desired sound at the desired time when you set the timer-on time.
Make sure the current time is correct. If it is not, correct it referring to page ⑩.
Even when the power is turned on at the timer-on time, the back light does not light.

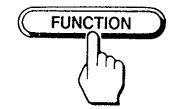
Make sure the ◴ indication is not displayed in the display window.



1 Press the POWER button.



2 Select the desired sound source.

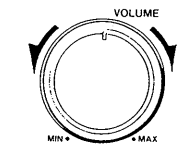


Note
When you reset the timer-on time, make sure the indicator of the desired sound source is lit.

	The indicator to be lit	Preparation
To listen to a disc*	CD indicator	Place a disc on the disc tray.
To listen to the radio	RADIO indicator	Tune in the desired station.
To listen to a tape	TAPE indicator	Insert a tape into the desired cassette holder.

*You can listen to a disc in a playing mode other than the normal playing mode.

3 Adjust the volume.



4 Set the timer. (See page ⑪.)

5 Press the STANDBY button.

The ◴ indication lights up.

Note
If you set the timer-on time and timer-off time to the same time, the timer does not function.

6 The power is turned off automatically.

At the timer-on time, the power is turned on and the sound comes on automatically.

When tapes are inserted both in deck A and deck B, deck A will be played back.
At the timer-off time the power is turned off automatically.

To confirm the timer-on, -off time and the function
Press the TIMER button, and the ◴ indication, the timer-on time, the timer-off time and the function are displayed in order. Then the display which appeared before you pressed the button reappears.

To stop the play in the middle
Press the POWER button.

To release the timer-on or -off time
Press the STANDBY button, and the ◴ indication disappears from the display window.

To listen to the desired sound at the same time on the next day
You need not set the timer and the function again, because the preset time and the function are stored until you reset them. When the ◴ indication is not displayed in the display window, press the STANDBY button again.

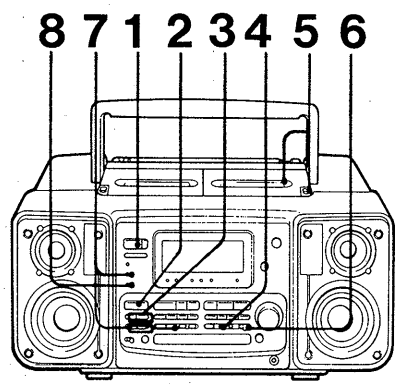
To listen to a disc starting with the desired selection by using the built-in timer
1 Press the POWER button.
2 Press the FUNCTION button to light up the CD indicator.
3 Make sure the disc is stopped, and display the desired selection number by pressing the I◀◀/▶▶I (selection) button.
4 Proceed with steps 3 through 6 in "To Listen to the Desired Sound at the Desired Time".

At the timer-on time, the disc starts with the desired selection. You can set Repeat 1 play, Repeat All play, Shuffle play or Program play.

To Record Radio Programs at the Desired Time (with deck B)

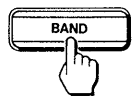
Make sure the current time of the unit is correct. If it is not, correct it referring to page ⑩.
Even when the power is turned on at the timer-on time, the back light does not light.

Make sure the 🕘 indication is not displayed in the display window.

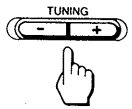


1 Press the POWER button.

2 Select the desired band.



3 Tune in the desired station.



When you have preset the stations, select the desired preset number.

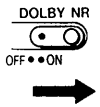
4 Select the desired tape direction mode by pressing the DIR MODE button.

	Displayed indication
To record on both sides of a cassette	⇄
To record on one side of a cassette	→

5 Insert a blank cassette into deck B.

Use a TYPE I (normal), TYPE II (CrO_2) or TYPE IV (metal) tapes.

6 Set the DOLBY NR switch to ON to record using the DOLBY B Noise Reduction system.



7 Set the timer.
(See page ㊸.)

8 Press the STANDBY button.

The 🕘 indication is displayed.

9 The power is turned off automatically.

At the timer-on time, the power is turned on and the sound comes on automatically.
At the timer-off time, the power is turned off automatically.

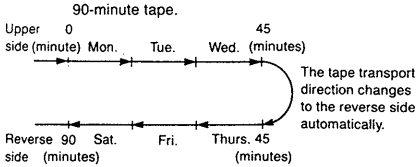
To stop the play in the middle
Press the POWER button.

To release the timer-on or -off time
Press the STANDBY button, and the 🕘 indication disappears from the display window.

To confirm the timer-on, -off time and the function
Press the TIMER button, and the 🕘 indication, the timer-on time, the timer-off time and the function are displayed in order. Then the display which appeared before you pressed the button reappears.

To record the same program on the next day
You need not repeat the above steps. As long as the 🕘 indication remains in the display window, the same program is recorded at the same time on the next day.
When the tape direction mode indication is ⇄ or ⟲, a program can be recorded from the upper side to the reverse side of a tape continuously every day.

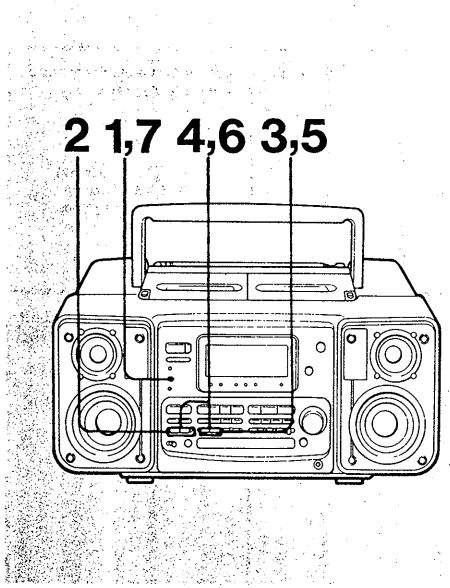
Example: to record a 15-minute program for a week on a 90-minute tape.



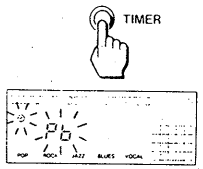
When the reverse side is finished, the recording set by the timer stops.

Notes
- For recording, using the unit on house current with the supplied AC power cord is recommended.
- When the tape direction mode is ⟲, the deck stops as soon as the reverse side of the tape is finished.

To Set the Timer-on Time and the Function Selector



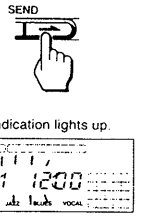
1 Press the TIMER button for about 2 seconds until the ⏲ indication and "Pb" or "REC" indication flash.



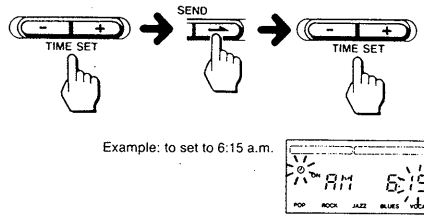
2 Select "Pb" (playback) or "REC" (recording) by pressing "−/+" of the TIME SET button.

To listen to the desired program at the desired time, select Pb, and to record a radio program at the desired time, select "REC".

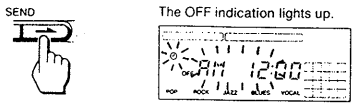
3 Press "➘" of the SEND button.



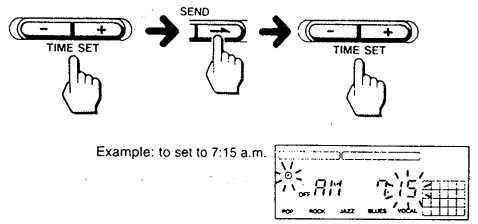
4 Program the timer-on time by pressing the TIME SET button and "➘" of the SEND button.



5 Press "➘" of the SEND button.



6 Program the timer-off time by pressing the TIME SET button and "➘" of the SEND button.

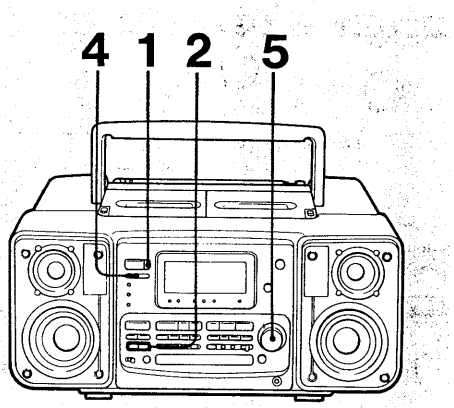


7 Press the TIMER button.

The timer-on and -off times have been stored.

To Fall Asleep with the Desired Sound — Sleep Function

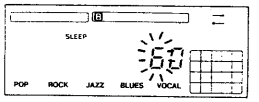
When the timer-off time (30 to 120 minutes in 30-minute intervals) is reached, the power is turned off automatically. You can fall asleep listening to the desired program. While the sleep function is operating, the back light does not light even when the power is on.



1 **Press the SLEEP button.**

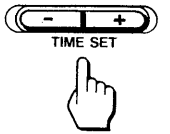
If the power is off, it will be turned on automatically.

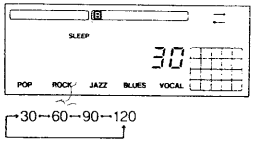
The SLEEP indication appears in the display window.



2 **Set the time duration with the TIME SET button within 4 seconds.**

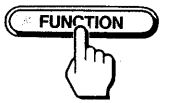
Example: the time duration of 30 minutes.





3 **About 4 seconds later, the indication which was displayed before setting the time duration appears.**
The sleep function starts.

4 **Select the desired sound source by pressing the function button.**



5 **Adjust the volume.**

To stop the sleep function in the middle of the setting
Press the SLEEP button again or the POWER button.

To reset the sleep time
Turn off the power, and repeat from step 1.

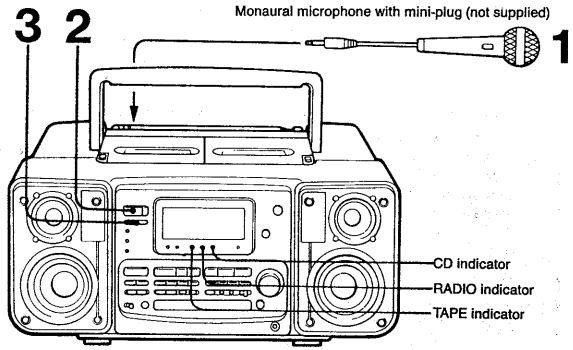
To fall asleep with the desired program and to be awakened with another program

1 Preset the desired program to wake up to.
① Press the POWER button.
② Set the desired timer-on, -off time and the desired function.
③ Press the STANDBY button.

2 Activate the sleep function
① Press the SLEEP button, and set the desired duration of time with the TIME SET button.
② Select the desired sound source.
③ Adjust the volume.

Microphone Mixing

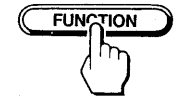
You can sing with "Karaoke" or add narration.



1 **Connect a microphone to the MIX MIC jack (on the rear panel).**
If the microphone has a power switch, set it to ON.

2 **Press the POWER button.**

3 **Select the desired sound source.**



	Indicator to be lit
To listen to a disc	CD
To listen to the radio	RADIO
To listen to a tape	TAPE

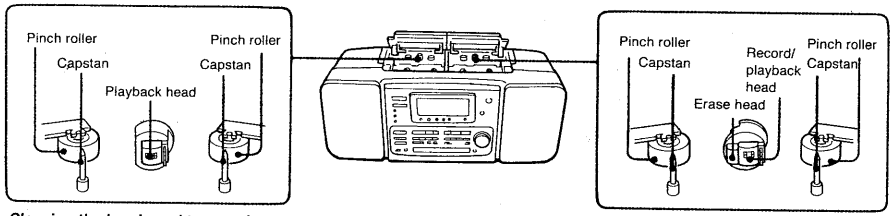
To record mixed sounds
Insert a cassette into deck B and set it in the recording mode.

To record mixed sound with tape
1 Insert a recorded cassette into deck A and a blank cassette into deck B.
2 Light up the TAPE indicator by pressing the FUNCTION button.
3 Press "NORM" of the DUBBING button.

Public address system
1 Connect a microphone to the MIX MIC jack.
When the microphone has a power switch, set it to ON.
2 Press the POWER button.
3 Light up the TAPE indicator by pressing the FUNCTION button.
4 Adjust the volume.
When the unit is set in the recording mode, only the sound from the microphone is recorded.

Notes
- When howling (acoustic feedback) occurs, move the microphone away from the speakers.
- Microphone sounds cannot be mixed in the high-speed dubbing mode.
- It is not recommended to use a microphone equipped with an echo function.

Maintenance



Cleaning the heads and tape path
Contaminated heads cause insufficient recording or sound drop-out in playback.
We recommend cleaning after every 10 hours of operation.
To make the best possible recording, however, you should clean all surface over which tape travels before making each recording.

Wipe the heads, the pinch rollers and the capstans with a cleaning tip slightly moistened with cleaning fluid or alcohol.

After cleaning the heads, rollers and the tape path, insert a cassette when the areas cleaned are completely dry.

Demagnetizing head
After 20 to 30 hours of use, enough residual magnetism will have built up on the heads to begin to cause loss of high frequencies and hiss. At this time, you should demagnetize the heads and all metal parts in the tape path with a commercially available head demagnetizer.

Cleaning the cabinet
Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzine.

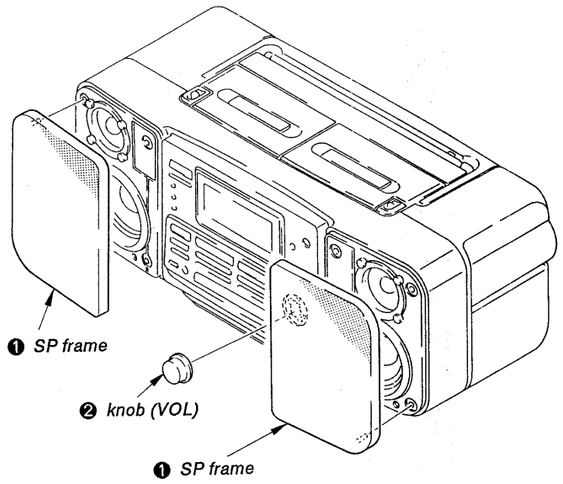
Notes on Compact Discs
- Before playing, clean the disc with a cleaning cloth. Wipe the disc from the center out.
- Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for analog discs.
- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature inside the car.
- After playing, store the disc in its case.

If there is a scratch, dirt or fingerprints on the disc, it may cause tracking error.

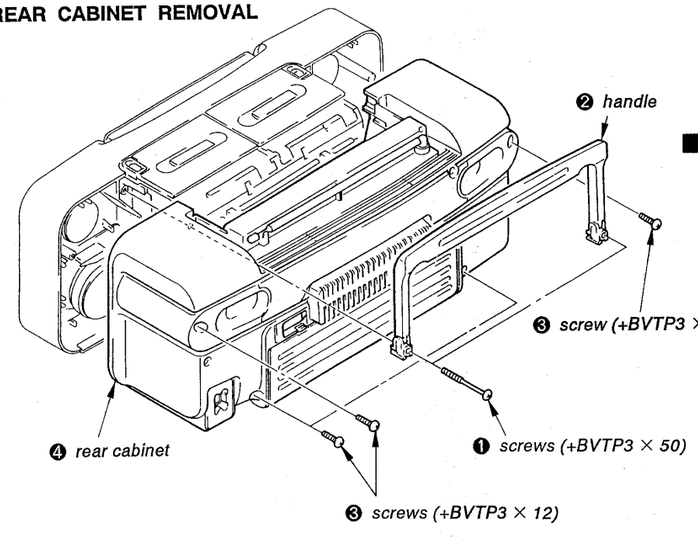
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

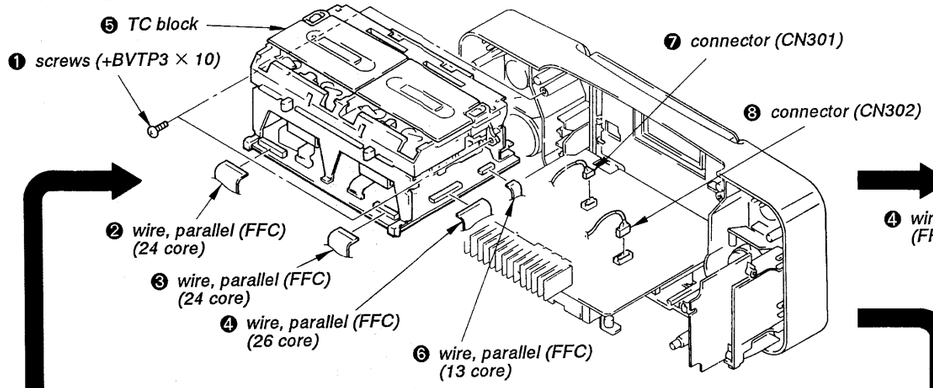
SP FRAME REMOVAL



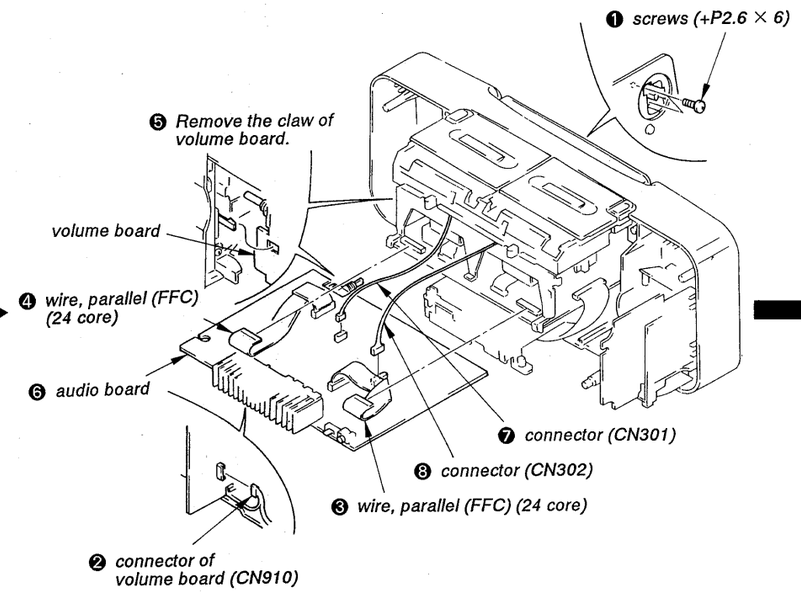
REAR CABINET REMOVAL



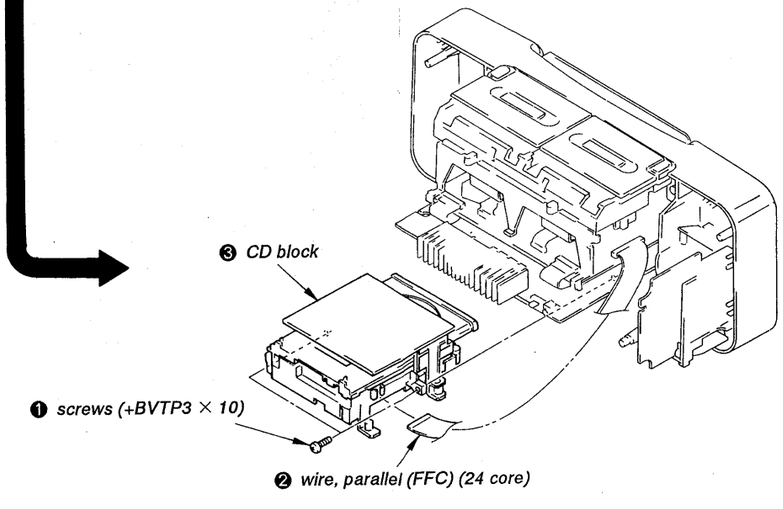
TC BLOCK REMOVAL


❺ TC block
❶ screws (+BVTP3 × 10)
❼ connector (CN301)
❽ connector (CN302)
❷ wire, parallel (FFC) (24 core)
❸ wire, parallel (FFC) (24 core)
❹ wire, parallel (FFC) (26 core)
❻ wire, parallel (FFC) (13 core)

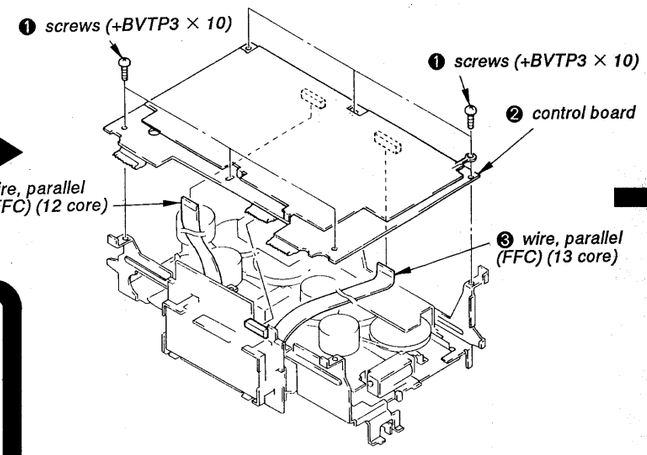
AUDIO BOARD REMOVAL


❶ screws (+P2.6 × 6)
❺ Remove the claw of volume board.
volume board
❹ wire, parallel (FFC) (24 core)
❻ audio board
❼ connector (CN301)
❽ connector (CN302)
❸ wire, parallel (FFC) (24 core)
❷ connector of volume board (CN910)

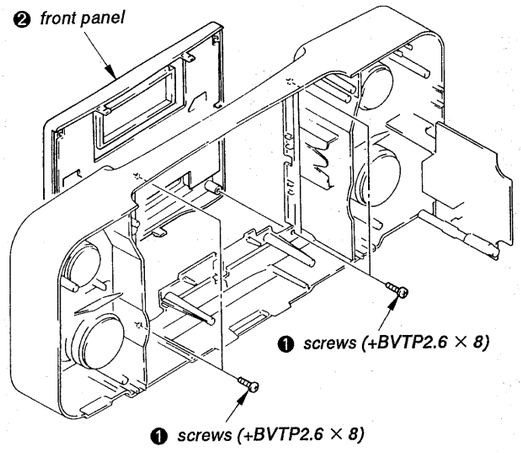
CD BLOCK REMOVAL



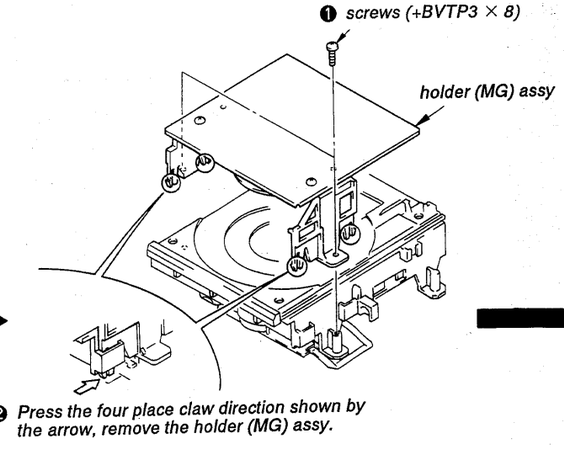
CONTROL BOARD REMOVAL



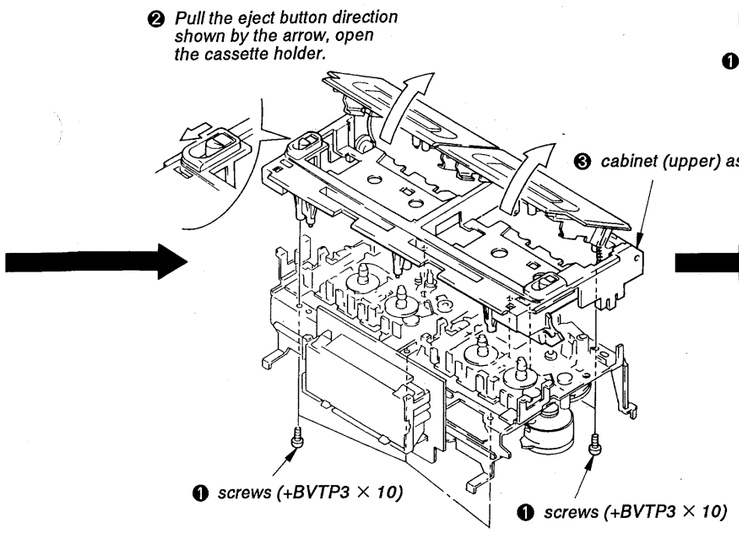
FRONT PANEL REMOVAL



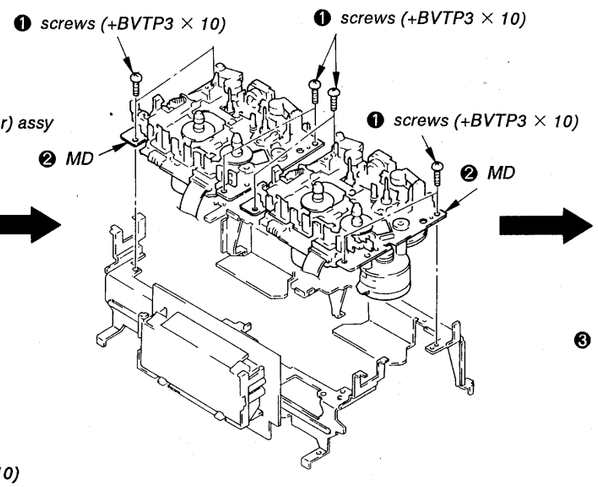
HOLDER (MG) ASSY REMOVAL



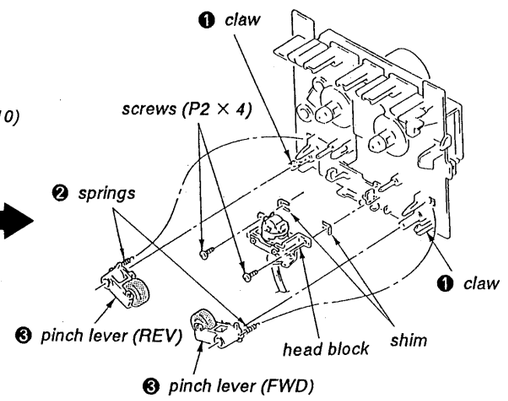
CABINET (UPPER) ASSY REMOVAL


❷ Pull the eject button direction shown by the arrow, open the cassette holder.
❸ cabinet (upper) assy
❶ screws (+BVTP3 × 10)
❶ screws (+BVTP3 × 10)

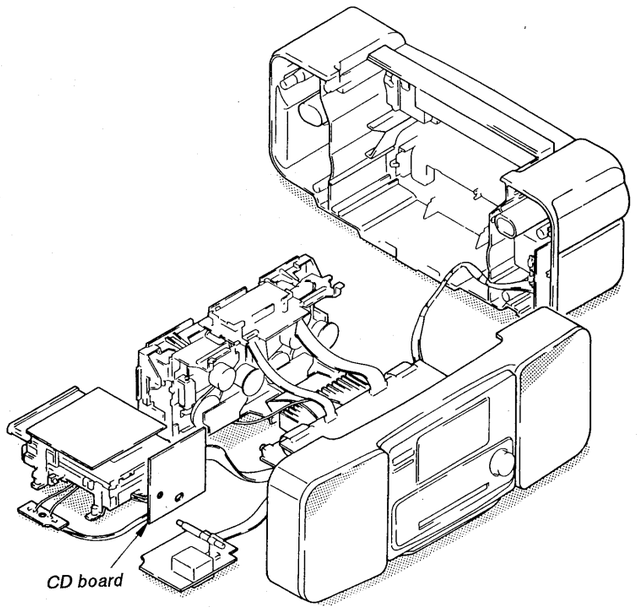
MD REMOVAL



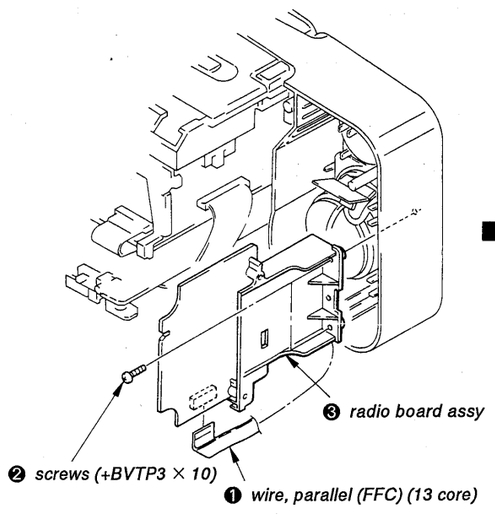
HEAD BLOCK AND PINCH LEVER REMOVAL



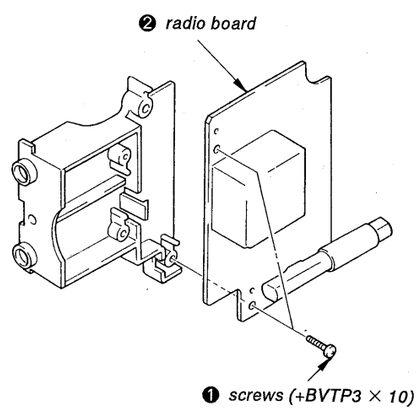
SERVICE POSITION OF CD BOARD



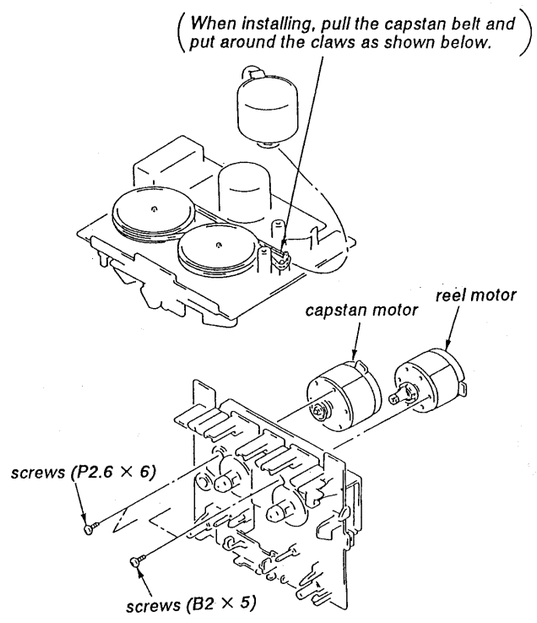
RADIO BOARD ASSY REMOVAL



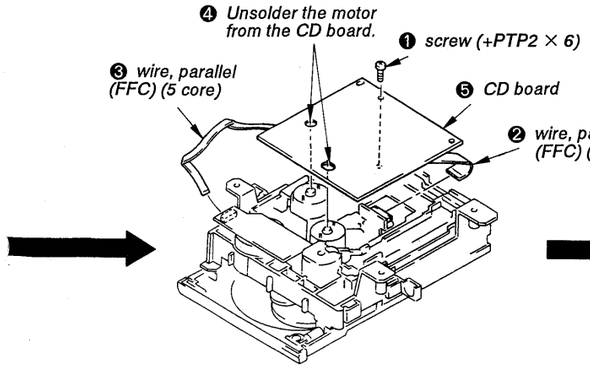
RADIO BOARD REMOVAL



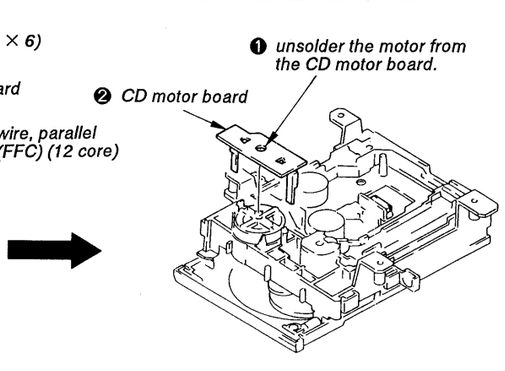
CAPSTAN MOTOR AND REEL MOTOR REMOVAL


(When installing, pull the capstan belt and put around the claws as shown below.
capstan motor
reel motor
screws (P2.6 × 6)
screws (B2 × 5)

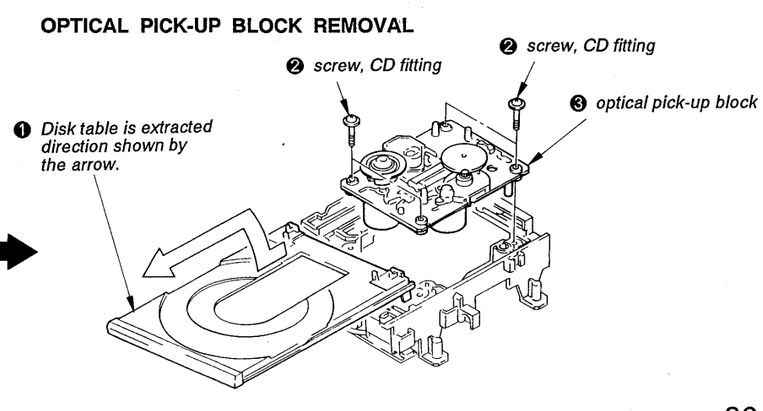
CD BOARD REMOVAL



CD MOTOR BOARD REMOVAL



OPTICAL PICK-UP BLOCK REMOVAL

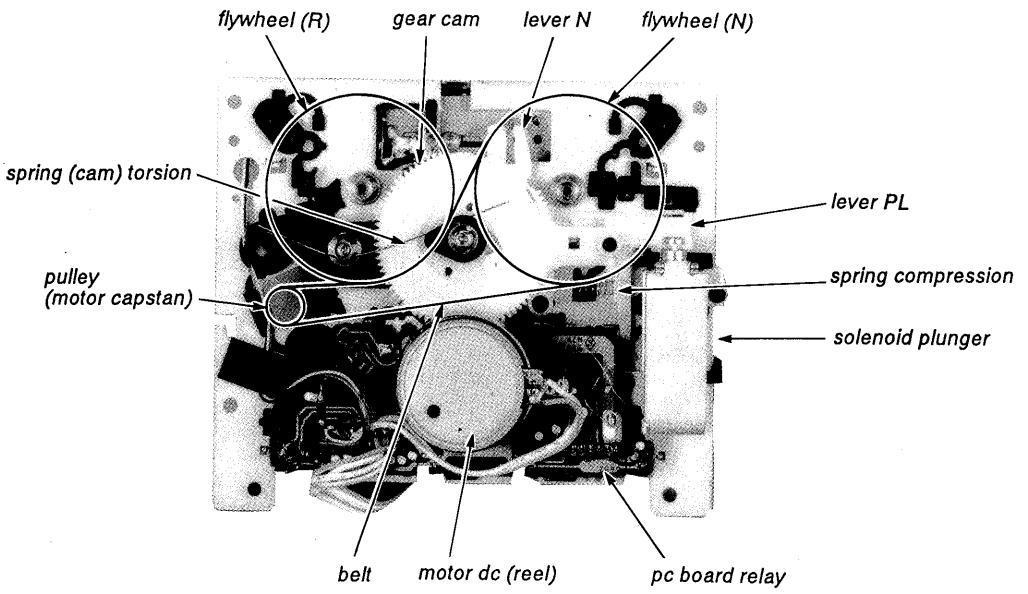


SECTION 3
MECHANISM OPERATION

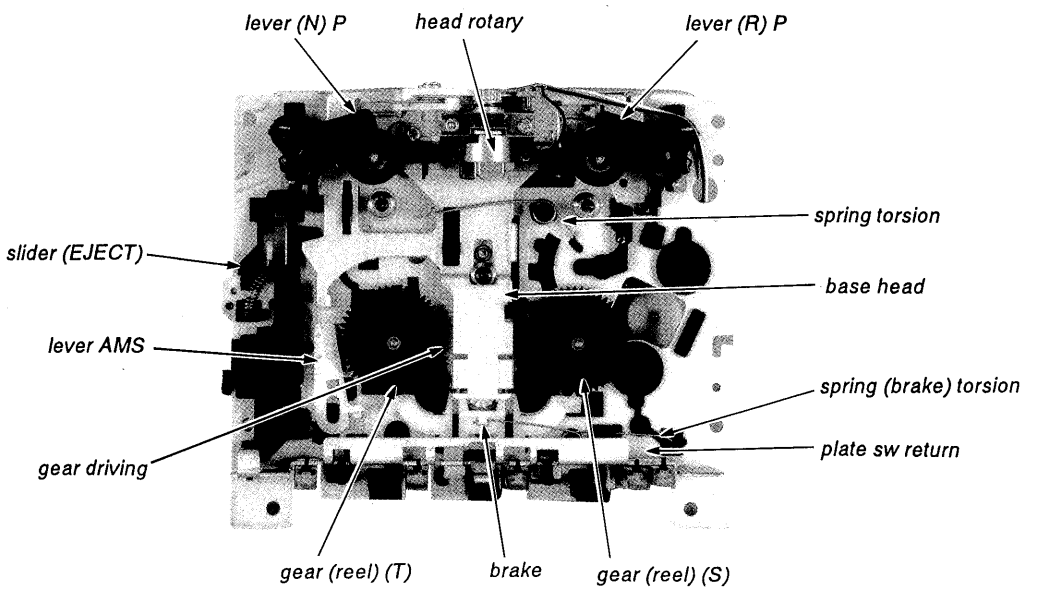
MECHANISM OPERATION

Modes are changed by that "Solenoid plunger" triggers "gear cam" to rotate in synchronizing with flywheel (N).
Main mechanical part names are shown in the follwings precedently to mechanism operation.

[Motor]



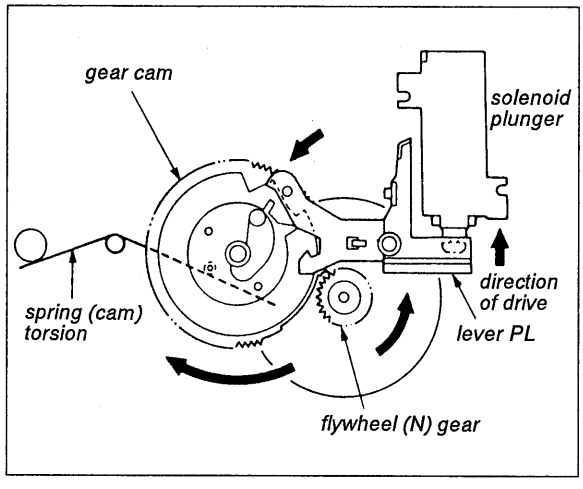
[Cassette]



Operations of the modes are as follows:

1. Operation of the cam gear

Perspective viewed from cassette

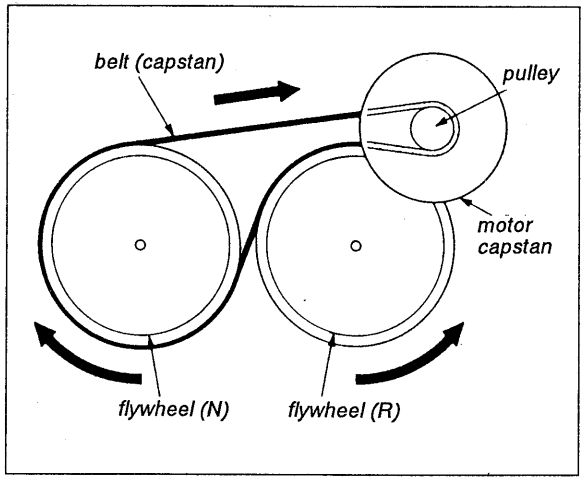


Operations are performed as follows;

1. Power is supplied to "solenoid plunger".
2. "Lever PL" moves in the direction of arrow.
3. "Gear cam" is turned by "spring (cam) torsion".
4. "Gear cam" is aligned with "flywheel (N) gear" so that "gear cam" is turned.
   (Approx. 0.5 seconds/1 turn)

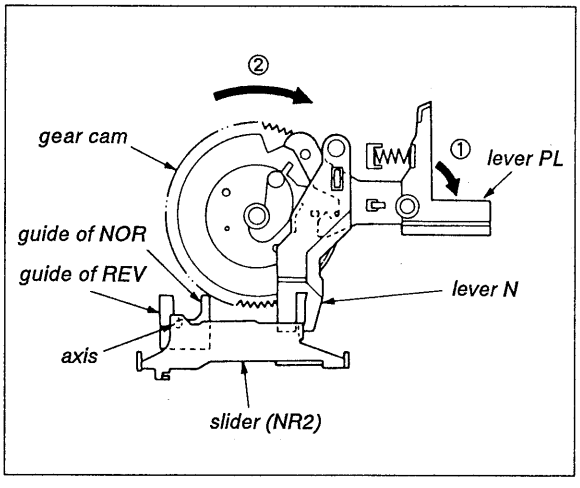
2. FWD mode

(1) Power is supplied to "motor capstan" and "flywheel" is turned by "belt (capstan)".



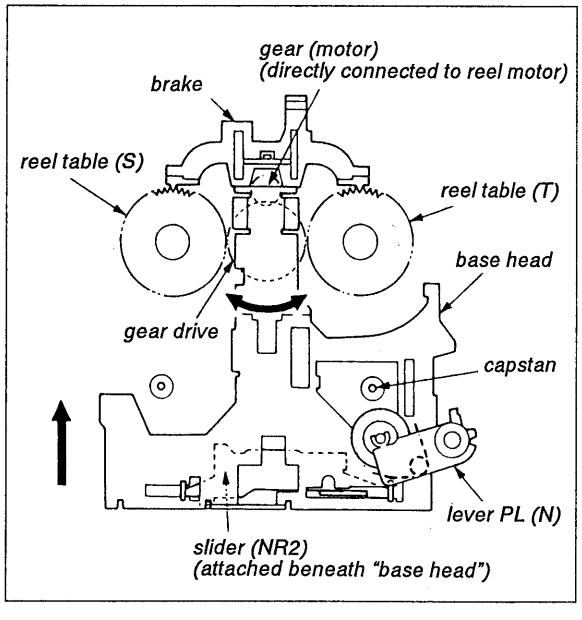
(2) Power is supplied to "solenoid plunger", "gear cam" is turned, a head is switched to NOR mode, and a head base is moved forward.

Perspective viewed from cassette



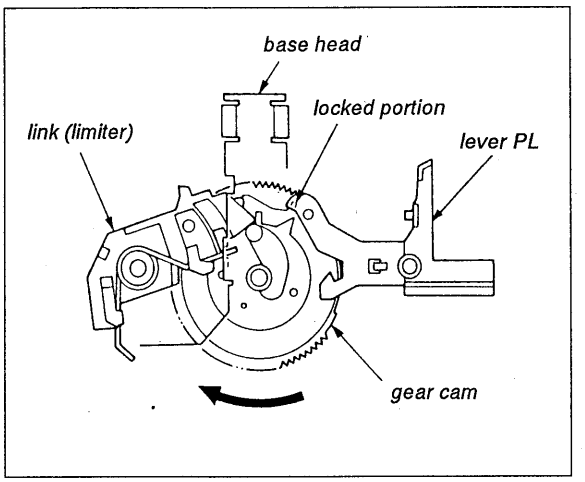
"Lever N" is turned counterclockwise by "gear cam" and is locked at "level PL".
Rotation (counterclockwise) of "lever N" is synchronized with sliding of "slider (NR2)". When "slider (NR2)" is slid rightward, mode of a head is switched from REV to NOR. Simultaneously "lever PL" is pressed to a capstan.

(3) "Bese head" is moved foward and the break is detached from the reel table. "Motor dc (reel)" is driven counterclockwise and the reel table (T) is turned by "gear driving". "Lever PL" is pressed to the capstan.



(4) "Base head" is moved forward by "spring torsion" of link (limiter) in synchronizing with rotating of "gear cam". "Gear cam" is turned and is locked by "lever PL".

(5) FWD mode switching is completed.

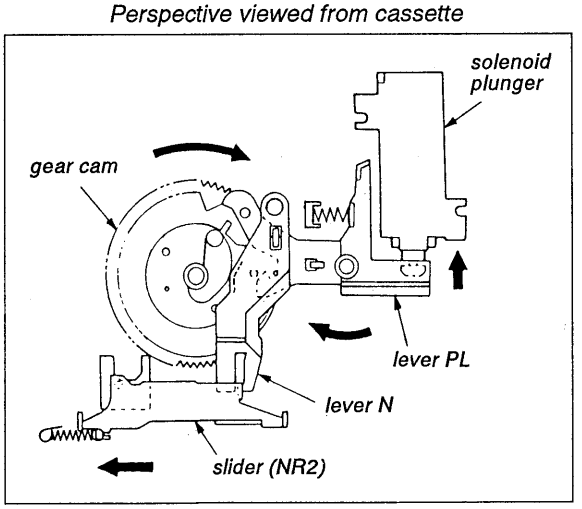


3. REV mode

Differences from FWD mode

Suction time of "solenoid plunger" is long, "lever N" is not locked by "lever PL", and a head is set to REV mode. The slider (NR2) is set to REV mode and "lever PL (R)" is pressed to a capstan. "Lever N" is turned by "gear cam". However, "lever PL" is not locked and is set back to previous position because "lever PL" is sucked by "solenoid plunger".
"Motor reel" is driven clockwise in REV mode.

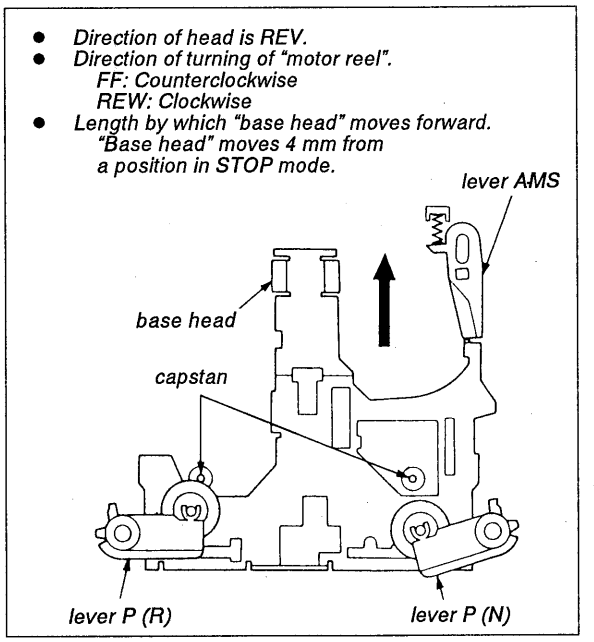
Perspective viewed from cassette



4. FF (REW) mode

Mechanism operation (same operation for both FF and REW modes)

The head base is locked at a set position by the AMS lever synchronized with "solenoid plunger".
"Motor capstan" is turned off after "base head" is locked.
Voltage of "motor reel" in FF or REW modes is 6 V.



5. FWD AMS mode

Mechanism operation

It is changed from FWD mode to STOP mode, "lever AMS" is stopped in midway of that "base head" is moved forward as mechanism operation of FWD mode, and it is set to FWD, AMS, and FF/REW modes. A position of "Base head" is the same as in FF/REW mode (advanced by 4 mm than STOP mode).
Difference from FF/REW mode is a turning direction of "motor reel".

6. REV AMS (REW/FF) mode

Timing chart

STOP → REV → AMS•REW/FF

- All the signals in REV AMS mode is the same as those of REW mode except that a LED blinks or lights on.

Mechanism operation

It is changed from REV mode to STOP mode, "lever AMS" is stopped in midway of that "base head" is moved forward as mechanism operation of REV mode, and it is set to REV, AMS, and REW/FF modes.
A position of "Base head" is the same as in FF/REW mode (advanced by 4 mm than STOP mode).
Difference from FF/REW mode is a turning direction of "motor reel".

SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

TAPE RECORDER SECTION

PRECAUTION

1. Clean the following parts with a denatured-alchohol-moistened swab:
   record/playback/erase head pinch rollers
   rubber belts Capstans idlers
2. Demagnetize the record/playback/erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed in the order given in this service manual.

Torque Measurement

DECK A, B:

Mode	Torque Meter	Meter reading
FWD	CQ-102C	22.5 – 50 g•cm (0.31 – 0.69 oz•inch)
FWD back tension		1.5 – 5 g•cm (0.02 to 0.06 oz•inch)
REV	CQ-102RC	22.5 – 50 g•cm (0.31 – 0.69 oz•inch)
REV back tension		1.5 – 5 g•cm (0.02 to 0.06 oz•inch)
FF	CQ-201B	140 – 180 g•cm (1.94 – 2.49 oz•inch)

Tape Tension:

DECK A, B

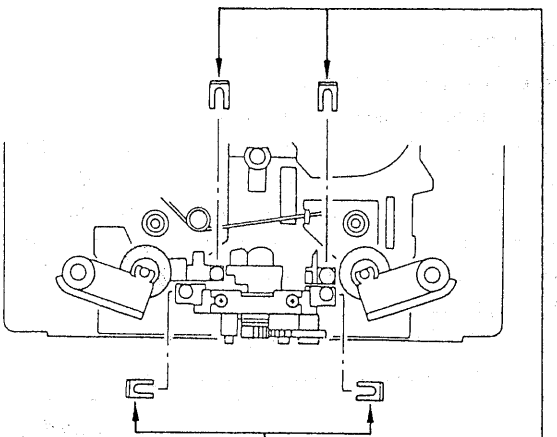
Mode	Tension Meter	Meter reading
FWD	CQ-403A	more than 100g (more than 1.38 oz•inch)
REV (Deck B)	CQ-403R	

Head Height Adjustment DECK B

Adjustment Procedure:

1. Insert a mirror cassette CQ-009C.
2. Make the set to FWD playback mode.
3. Loosen the FWD tape guide fixing screw and adjust with inserting the adjusting shim to eliminate tape curl and tape twist in the portions of tape guide and head.
4. Make the set to REV tape guide fixing screw and adjust with inserting the adjusting shim to eliminate tape curl and tape twist in the portions of tape guide and head.
5. Loosen the REV tape guide fixing screw and adjust with inserting the adjusting shim to eliminate tape curl and tape twist in the portions of tape guide and head.
6. After adjsutment, apply suitable locking compound to the fixing screws.

Adjustment Location:



Head height adjusting shim

Part No.	t
3-336-274-01	0.1
3-336-274-11	0.2
3-336-274-21	0.3

Tape guide height adjusting shim

Part No.	t
4-932-603-01	0.1
4-932-603-11	0.2

4-2. ELECTRICAL ADJUSTMENTS

TAPE RECORDER SECTION

PRECAUTION

1. Adjustments should be performed in the order given.
   Generally playback circuit adjusments should be completed before performing recording circuit adjustments.
2. Adjustments should be performed for both L-ch and R-ch.
   Switches and controls should be set as follows unless otherwise specified.

- **Positions of switches and control knobs**

FUNCTION ..... TAPE
ISS 2
DIR MODE ..... ⇆
VOLUME ..... standard output level position
DOLBY NR ..... OFF

- **Standard Record:**
  Deliver the standard input signal level to the input jack and set the VOLUME control to obtain the standard output signal level.

- **Standard input level**

Input Pin	MIX AMP IN (CN311 ① SIGNAL ③ GND)
Signal source impedance	300 Ω
Input signal level	0.19 mV (− 12 dB)
Frequency	1 kHz

- **Standard output level**

Output Pin	SP OUT (L. R)	STEREO MINIJACK	DOLBY OUT (CN311 ② L ch ③ GND ④ R ch)
Signal source impedance	8Ω	32Ω	no-load
Output signal level	0.775 V (0 dB)	0.09 V (− 18.5 dB)	0.18 V (− 12.7 dB)

0 dB=0.775 V

- **Test tape**

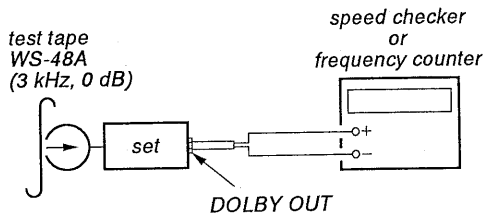
Test Tape	Signal	Used for
WS-48A	3 kHz, 0 dB	Tape speed adjustment
P-4-A100	10 kHz, − 10 dB	REC/PB/ERASE Head azimuth and phase adjustment
P-4-L300	315 Hz, 0 dB	PB level adjustment
CS-122	–	Recording bias and Recording level adjustment

- **Test mode**

1. Perform adjustment in the test mode.
2. After adjustment, be sure to press the POWER key to cancel the test mode.

Tape Speed Adjustment DECK A DECK B

Procedure:
Mode: FWD playback



1. Press the dubbing HIGH button to set high speed.

Adjustment Value: high speed

Speed checker	Digital frequency counter
− 1.17 to − 0.83%	5,930 to 5,950 Hz

Frequency difference between the beginning and the end of the tape should be within 1% (60 Hz).

Adjustment Location:
DECK A side RV602
DECK B side RV604

2. Press the dubbing NORM button to set normal speed.

Adjustment Value: normal speed

Speed checker	Digital frequency counter
− 1.17 to − 0.83%	2,965 to 2,975 Hz

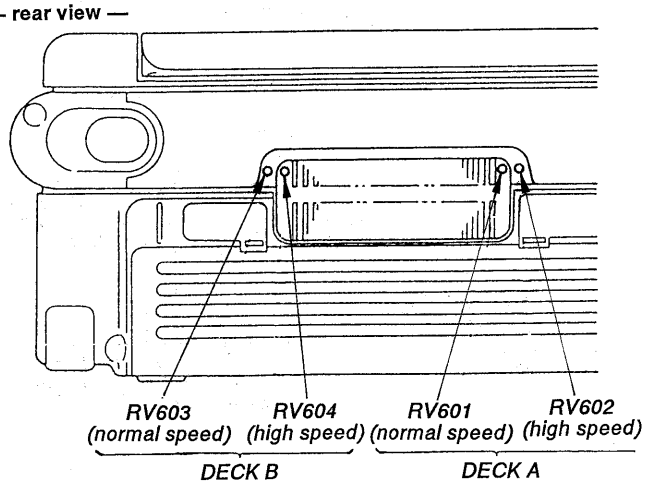
Frequency difference between the beginning and the end of the tape should be within 1% (30 Hz).

Adjustment Location:
DECK A side RV601
DECK B side RV603

3. If the specifications are not satisfied, repeat step 1 and 2.

Adjustment Location: CONTROL board

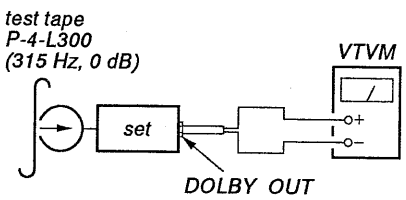
— rear view —



Playback Level Adjustments DECK A DECK B

Procedure:

1. Mode: playback



Adjust,
DECK A side RV101 (L-CH), RV201 (R-CH)
DECK B side RV102 (L-CH), RV202 (R-CH)
So that the specifications are satisfied,

Adjustment Value:
DOLBY OUT level: 0.19 to 0.17 V
(− 12.4 dB to − 13.0 dB)
level difference between the channels:
within 0.3 dB
Confirm that DOLBY OUT level is not changed when playback and Stop are repeated.

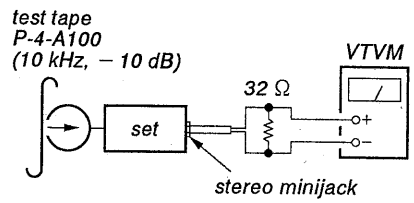
Adjustment Location: AUDIO board (See page 37).

Record/Playback/Erase Head Azimuth Adjustment

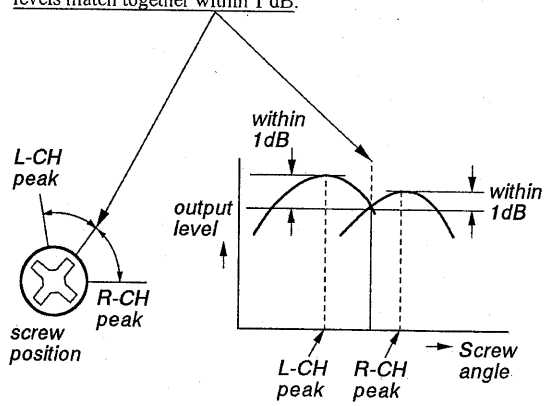
DECK A DECK B

Procedure:

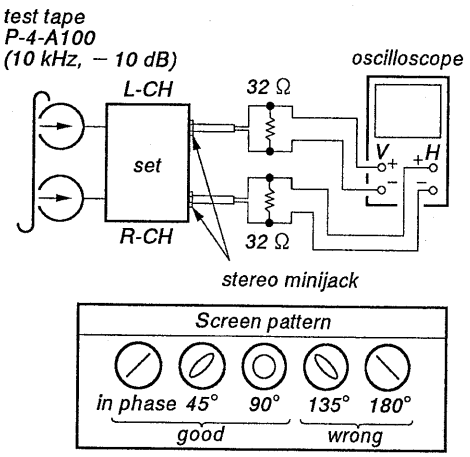
1. Mode: FWD/REV playback (DECK B)
FWD playback (DECK A)



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.

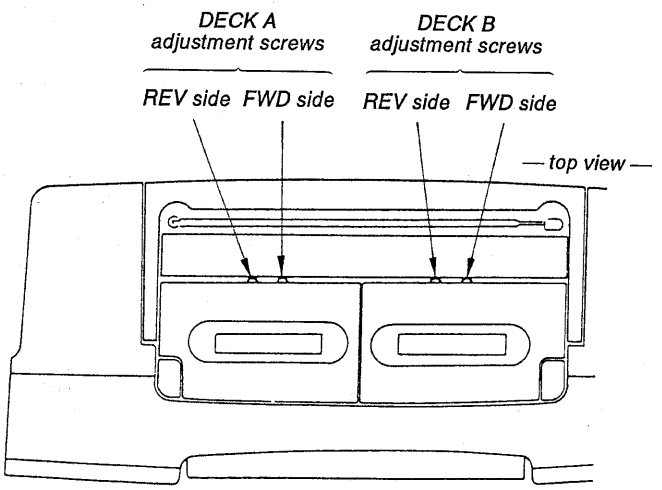


3. Phase Check
Mode: FWD/REV playback (DECK B)
FWD playback (DECK A)



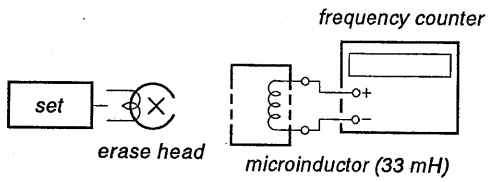
4. Set in the REV mode and repeat the step 1 to 3.
5. After the adjustment, lock the screws with locking compound.

Adjustment Location:



Recording Bias Oscillation Frequency Adjustment

Procedure :



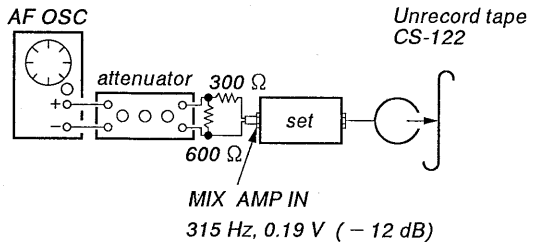
1. Put into no-signal state.
2. Bring the microinductor, which is connected to the frequency counter, close to the erase head core.
3. When the ISS switch is at 2, adjust T301 for 106 kHz ± 1.5 kHz.

Adjustment Location: AUDIO board (See page 37).

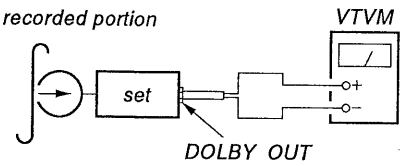
Recording Level Adjustment DECK B

Procedure:

1. Record



2. Playback



3. Playback the recorded signal on item 1, and confirm the signal level becomes to the adjustment value.
   When it is out of order, adjust with RV103 (L-ch) and RV203 (R-ch) and repeat items 1 to 3.

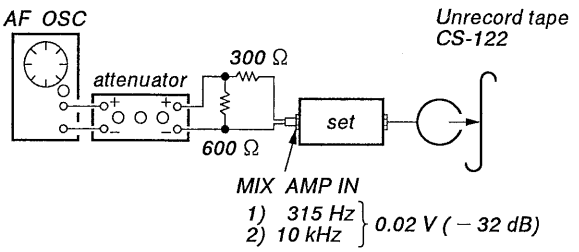
Adjustment Value: 0 ± 0.5 dB against the monitor output level before recording

Adjustment Location: AUDIO board (See page 37).

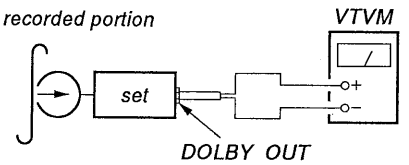
Recording Bias Adjustment DECK B

Procedure:

1. Record



2. Playback

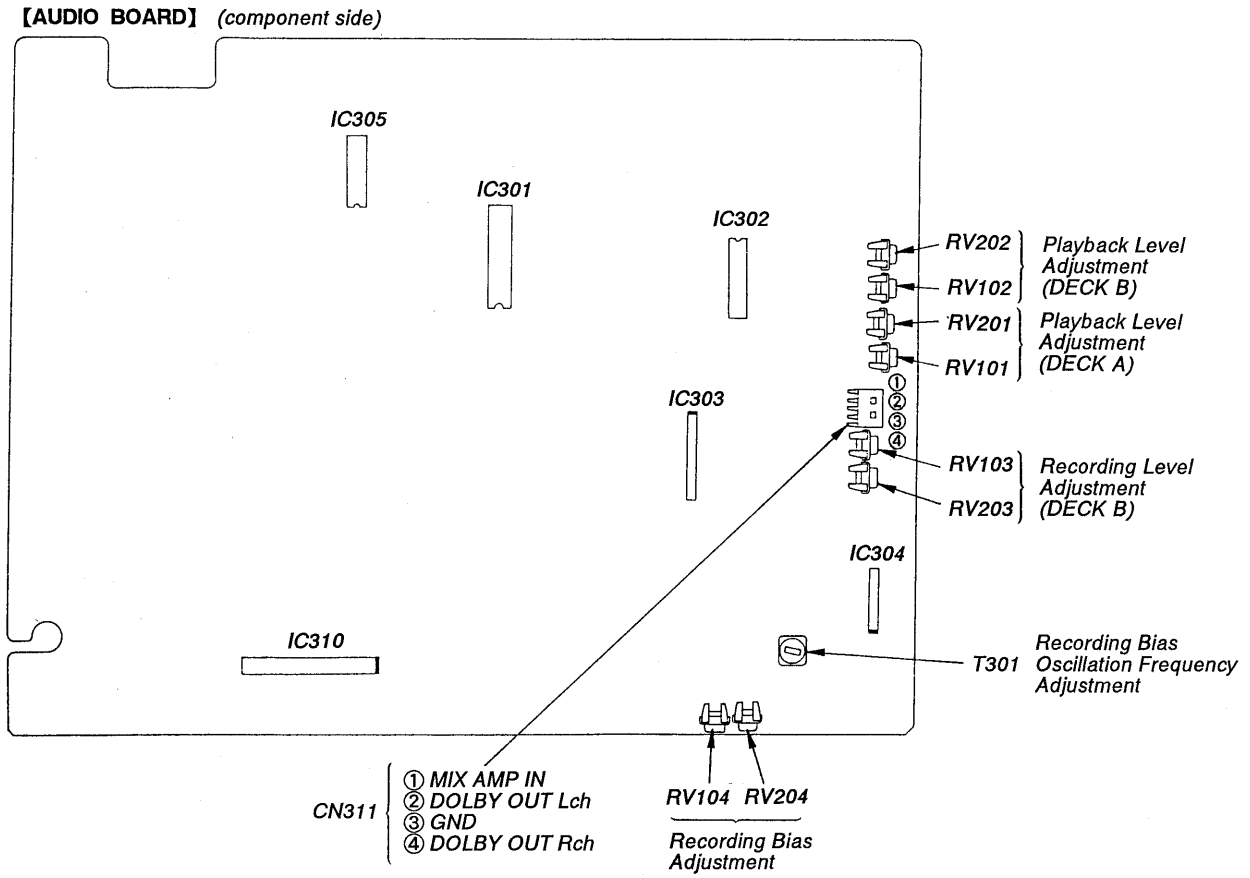


3. Playback the recorded signal on item 1, and comfirm the signal level becomes to the adjustment value. When it is out of order, adjust with RV104 (L-ch) and RV204 (R-ch) and repeat items 1 to 3.

Adjustment Value: 10 kHz playback level difference adjsut 315 Hz playback level; − 0.5 to +0.5 dB.

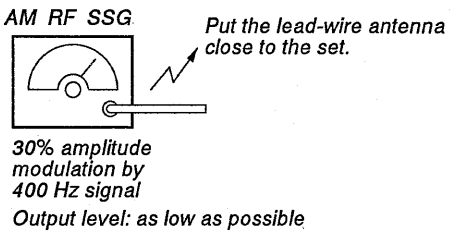
Adjustment Location: AUDIO board (See page 37).

Adjustment Location:

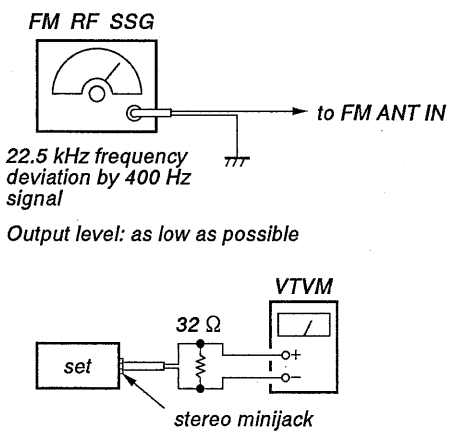


TUNER SECTION

[AM]
BAND switch: AM


AM RF SSG
Put the lead-wire antenna close to the set.
30% amplitude modulation by 400 Hz signal
Output level: as low as possible

[FM]
BAND switch: FM



- **Positions of switches and control knobs**
  FUNCTION ····· RADIO
  FM MODE ····· ST
  ISS ····· 2
  VOLUME ····· standard output level position
  SOUND MODE ····· OFF

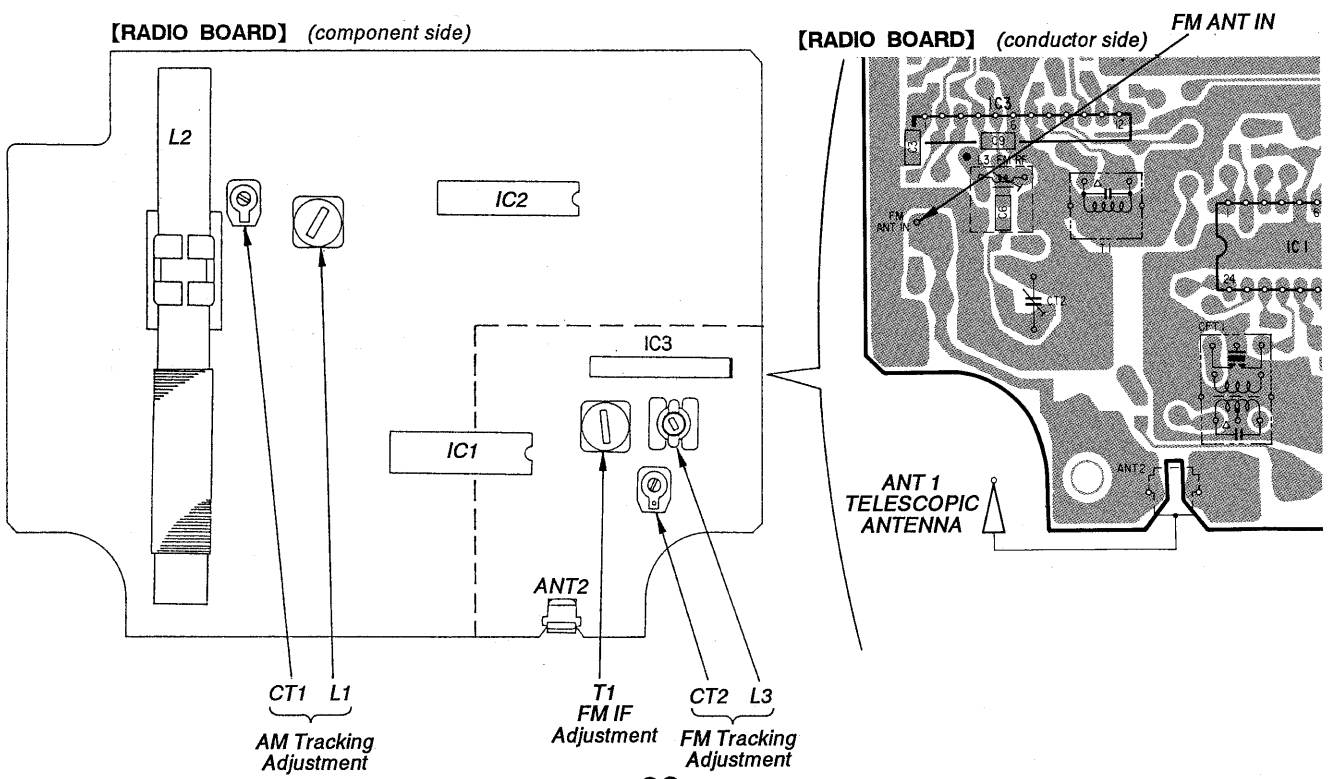
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	621 kHz
CT1	1,404 kHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	76 MHz
CT2	108 MHZ

FM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	10.7 MHz

Adjustment Location:



CD SECTION

Notes on Adjustment

1. Perform adjustment in service mode.
   After adjustment, be sure to release test mode.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) only when so indicated.

Before Adjustment

Put the set into service mode and perform the following checks. Repair if there are any problems.

How to Put into the Test Mode

Turn on the POWER switch while pressing the CD STOP key (■).

- **Sled Motor Check**
  Press ▶ key, then press ■ key.
  Press ▶▶| , |◀◀ keys and comfirm that the FOP moves smoothly from the innermost to outermost circumference and back smoothly and with no catching or abnormal noises.
  Cancellation of BTL mute.
  ▶▶| : FOP moves to the outer circumference
  |◀◀ : FOP moves to the inner circumference

- **Focus Search Check**

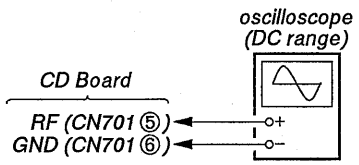
1. Press ▷ key. (Focus search operation is performed continuously.)
2. Look at the FOP objective lens and confirm that it moves up and down smoothly, with no catching or abnormal noises.
3. Press ■ key. (Focus search operation stops and the turntable continues to turn.)
4. Press ■ key again longer, the turntable stops.

Note: When the malfunction is occured by mis-passing other keys, turn off the power and check again from making the test mode.

Focus Bias Check

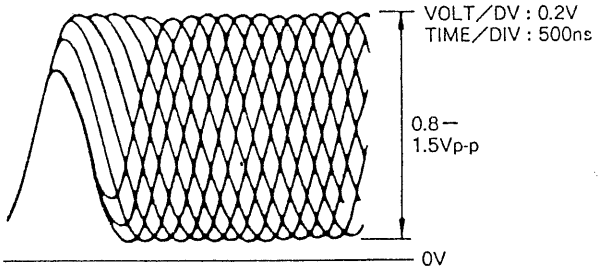
This check is to be done when the optical block replaced.

Check Procedure:



1. Connect the oscilloscope between CN701 pins ⑤ and ⑥.
2. Put the set into service mode.
3. Press the ▶▶| and |◀◀ keys to move the FOP to the center. (Move the FOP to the music area on the disc to enable easy visibility of the eye pattern.)
4. Insert disc (YEDS-18) and press ▷ key.
5. Confirm that the eye pattern of oscilloscope waveform becomes clear. A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
6. Release test mode after adjustment is completed.

- RF signal reference waveform (eye pattern)



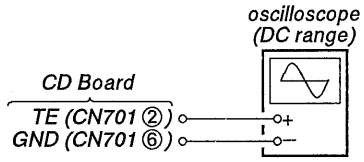
When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensivity.

Check Location: CD board (See page 41).

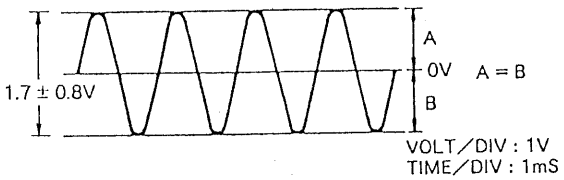
E. F Balance Check

This check is to be done when the optical block is replaced.

Check Procedure:



1. Connect the oscilloscope between CN701 pins ② and ⑥.
2. Put the set into test mode.
3. Press the ▶▶| and |◀◀ keys to move the FOP to the center.
4. Insert disc (YEDS-18) and press ▷ key.
5. The focus ON status is settled through focus seraching, and the CLV signal take mode is set. In this status, the tracking motor and sled motor are turned off. Confirm that the waveform on oscilloscope is vertically symmetric to 0 V.
6. Release test mode after adjustment is completed.



Check Location: CD board (See page 41).

REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.
However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

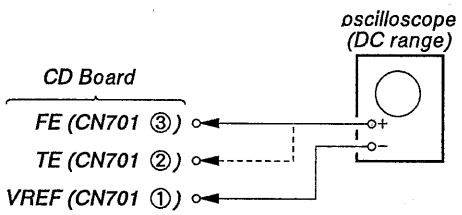
Gain / Symptoms	Focus	Tracking
• The time until music starts becomes longer for STOP ➡ ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed). (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP ➡ ▶ PLAY or automatic selection (⏮ , ⏭ buttons pressed).	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

– Simple Adjustment –

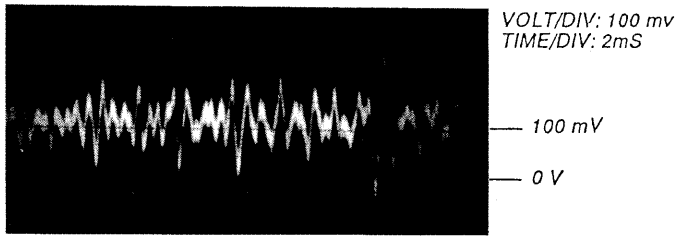
Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



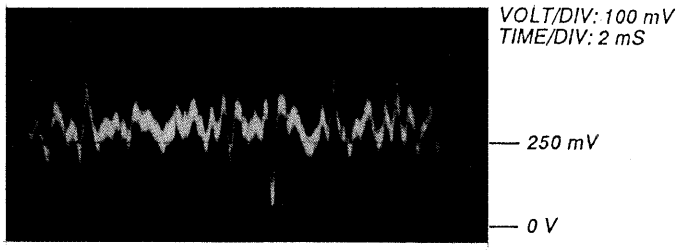
1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope between CN701 pins ③ and ①.
4. Adjustment RV701 so that the waveform is as shown in the figure below. (focus gain adjustment)

Adjustment Location: CD board (See page 41).

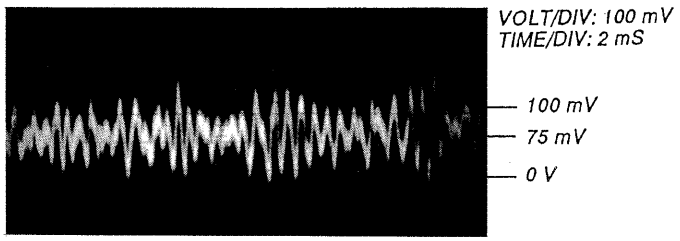


- Incorrent Examples (DC level changes more than on adjusted waveform)

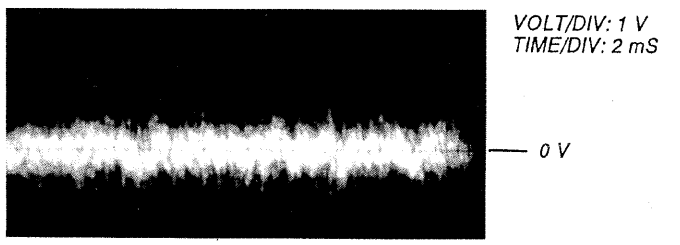
low focus gain



high focus gain

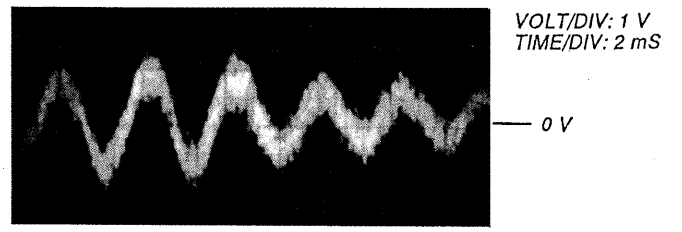


5. Connect the oscilloscope between CN701 pins ② and ①.
6. Adjust RV702 so that the waveform is as shown in the figure below. (tracking gain adjustment)

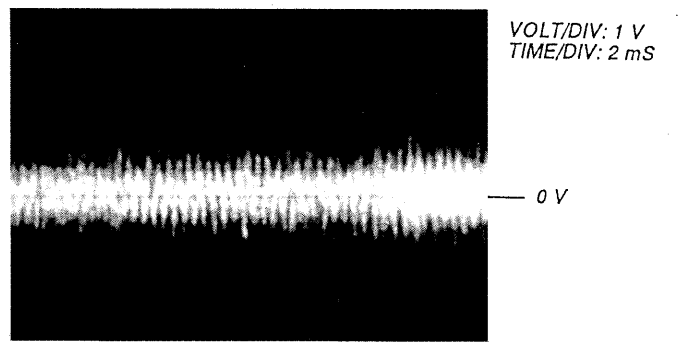


- Incorrect Examples (fundamental wave appears)

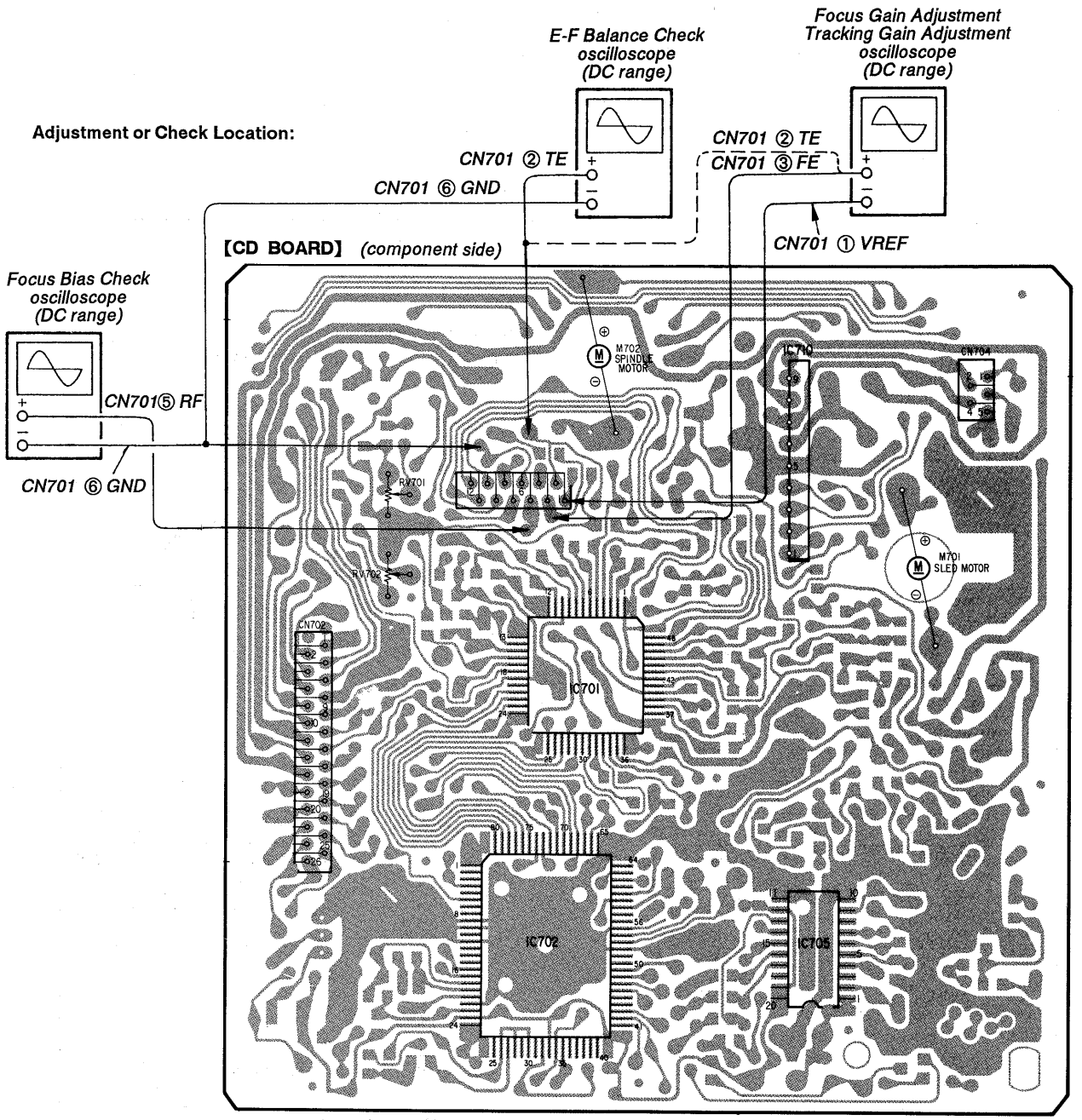
low tracking gain



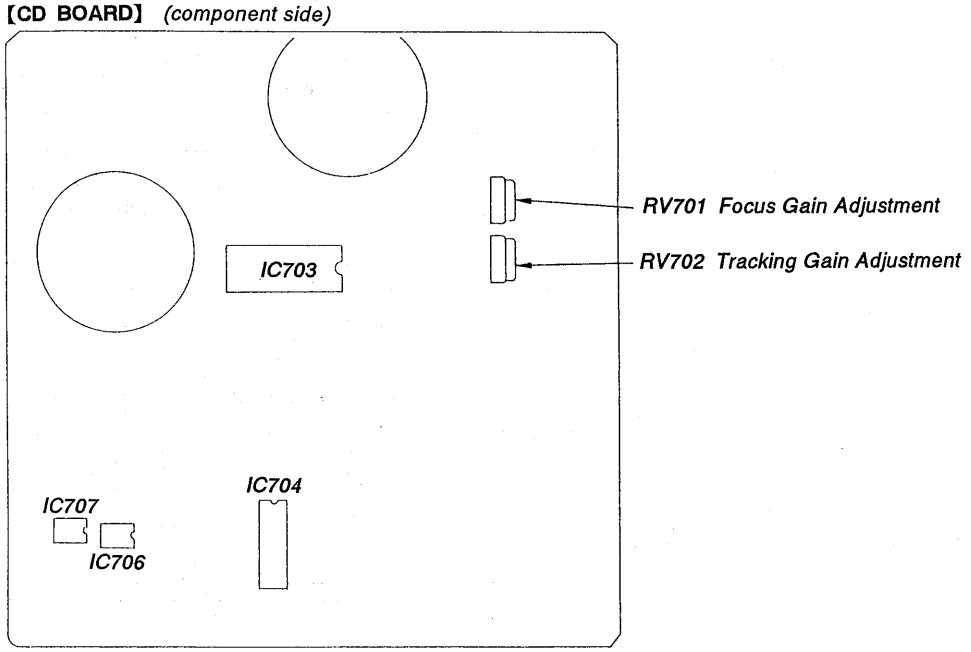
high tracking gain
(higher fundamental wave than for low gain)



Adjustment or Check Location:



【CD BOARD】 *(component side)*



SECTION 5
DIAGRAMS

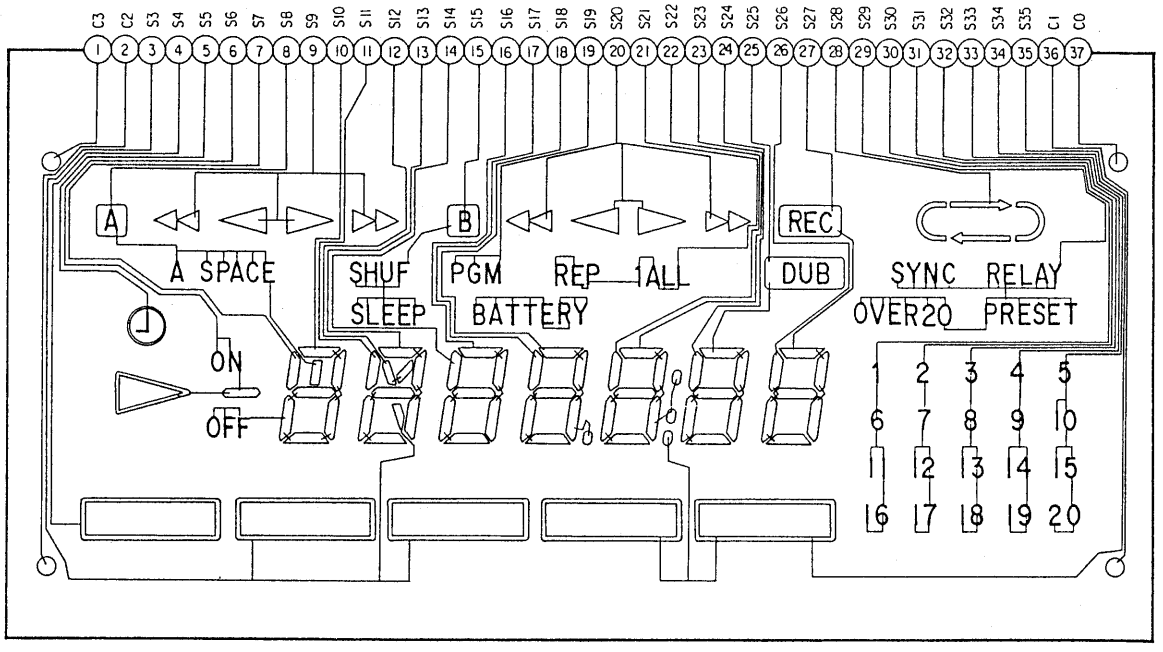
5-1. IC PORT TABLE

[IC701 (CXA1372AQ) pin function description]

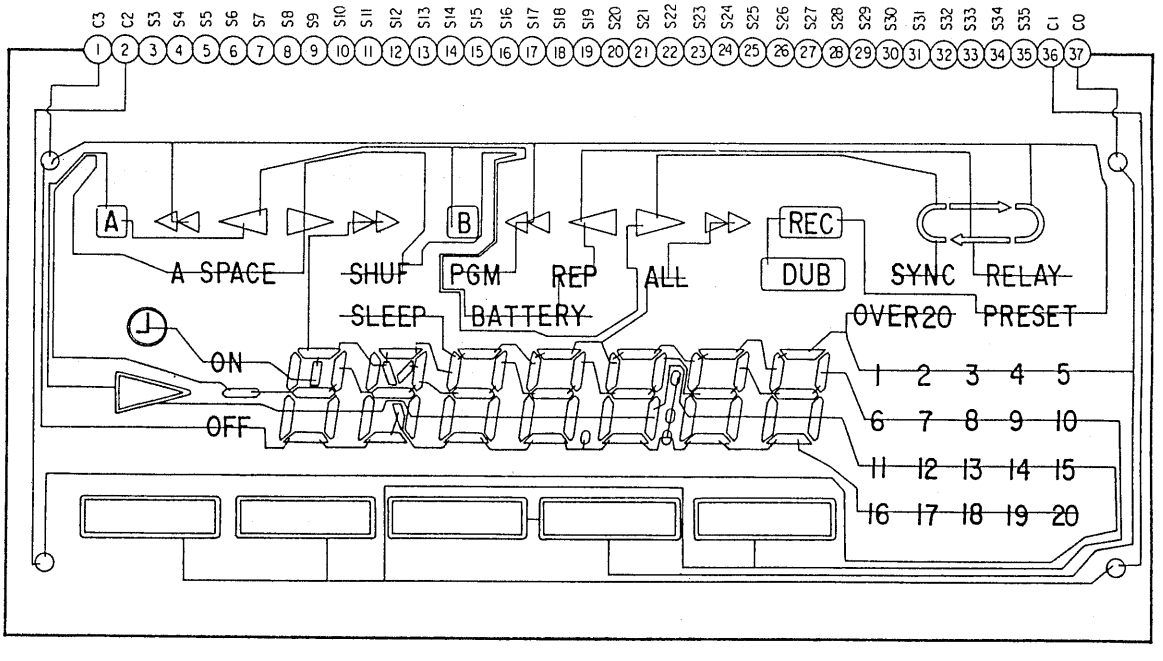
Pin number	Pin name	I/O	Pin description
1	VC	I	Midpoint voltage input terminal. GND when there are 2 power supplies. (Vcc+GND) /2 when there is a single power supply.
2	FGD	I	To lower the high range gain of the focus servo, insert a capacitor between this pin and pin 3.
3	FS3	I	Switches the high range gain of the focus servo based on FS3 ON/OFF.
4	FLB	I	Time constant external terminal for raising the focus servo low range.
5	FEO	O	Focus drive output.
6	FE –	I	Focus amp inverted input terminal.
7	SRCH	I	Time constant external terminal for creating the focus serch waveform.
8	TGU	I	Time constant external terminal for switching tracking high range gain.
9	TG2	I	Time constant external terminal for switching tracking high range gain.
10	AVcc	–	Power supply terminal (+5 V).
11	TAO	O	Tracking drive output.
12	TA –	I	Tracking amp inverted input terminal.
13	SL+	I	Tread amp non-inverted input terminal.
14	SLO	O	Tread drive output.
15	SL –	I	Tread amp inverted input terminal.
16	FSET	I	Focus tracking phase compensation peak setting terminal.
17	ISET	I	The current which determines focus search, tracking jump and thread kick height flows through this terminal.
18	SSTOP	I	Terminal for ON/OFF detect signal from limit switch used to detect the innermost portion of the disc.
19	AVEE	–	GND terminal.
20	(DIRC)	(I)	Used for 1-track jump operation. Equipped with a 47 kohm pull-up resistor. (Not used at present.)
21	LOCK	I	When L, the anti-misthreading circuit operates. Equipped with a 47 khom pull-up resistor.
22	CLK	I	Input terminal for the serial data transfer clock from the CPU (no pull-up resistor).
23	XLT	I	Input terminal for latch from the CPU (no pull-up resistor).
24	DATA	I	Input terminal for serial data from the CPU (no pull-up resistor).
25	XRST	I	Reset terminal. Reset when L (no pull-up resostor).
26	C. OUT	O	Number of tracks count signal output terminal.
27	SENS	O	Outputs FCZ, AS, TZC, SSTOP, etc. in response to commands from the CPU.
28	DGND	–	GND terminal.
29	MIRR	O	MIRR comparator output terminal. (DC voltage: connected to 10 kΩ load.)
30	DFCT	O	DEFECT comparator output terminal. (DC voltage: connected to 10 kΩ load.)
31	ASY	I	Auto asymmetry control input terminal.
32	EFM	O	EFM comparator output terminal. (DC voltage: connected to 10 kΩ load.)
33	FOK	O	Focus OK comparator output terminal. (DC voltage: connected to 10 kΩ load.)
34	CC2	I	Input terminal for input capacitively coupled with DEFECT bottom hold output.
35	CC1	O	DEFECT bottom hold output terminal.
36	DVCC	–	Power supply terminal (+5 V).
37	CB	I	Terminal connected to DEFECT bottom hold output capacitor.

Pin number	Pin name	I/O	Pin description
38	CP	I	Terminal connector to MIRR hold capacitor. MIRR comparator non-inverted input terminal.
39	RFI	I	Input terminal for input capacitively coupled with RF summing amp output.
40	RFO	O	RF summing amp output terminal. Checkpoint for eye pattern.
41	DVEE	–	GND terminal.
42	TZC	I	Tracking zero-cross comparator input terminal.
43	TE	I	Tracking error input terminal.
44	TDFCT	I	Terminal for connecting time constant capacitor in case of defect.
45	ATSC	I	Window comparator input terminal for ATSC detection.
46	FZC	I	Focus zero-cross comparator input terminal.
47	FE	I	Focus error input terminal.
48	FDFCT	I	Terminal for connecting time constant capacitor in case of defect.

ND801 LIQUID CRYSTAL DISPLAY (SEGMENT)

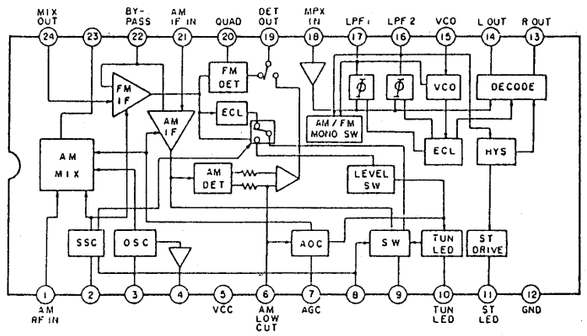


ND801 LIQUID CRYSTAL DISPLAY (COMMON)

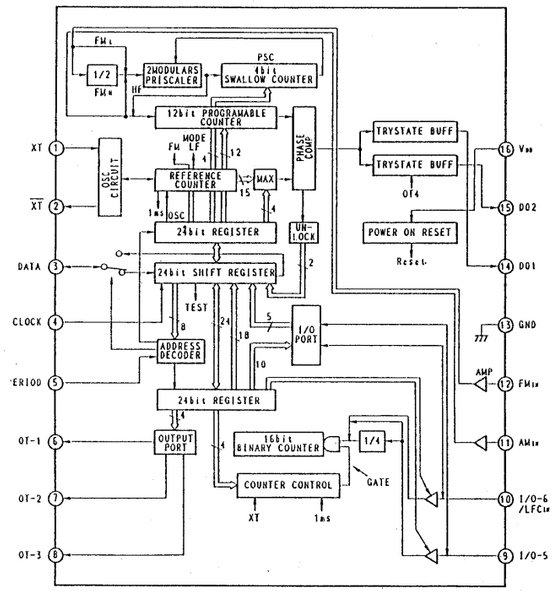


• IC Block Diagrams

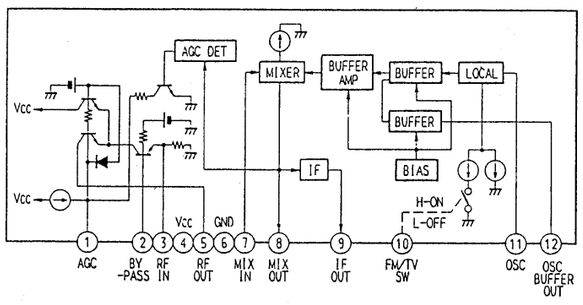
IC1 TA2012N (RADIO BOARD)



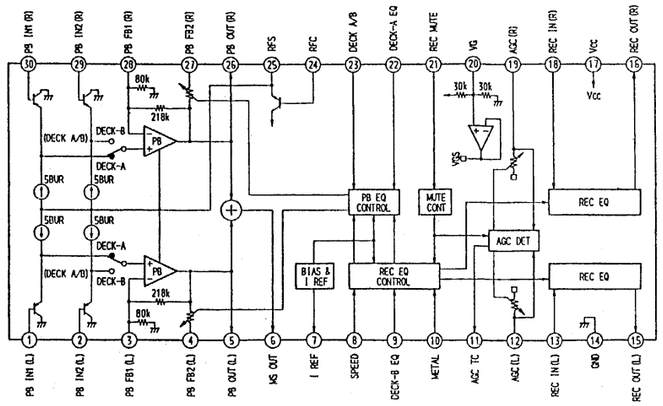
IC2 TC9216P (RADIO BOARD)



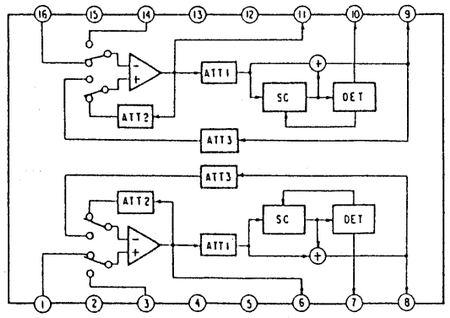
IC3 TA8176SN (RADIO BOARD)



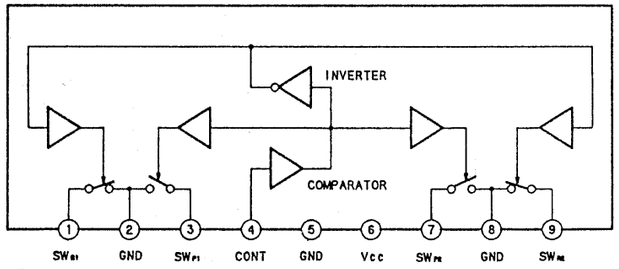
IC301 CXA1498S (AUDIO BOARD)



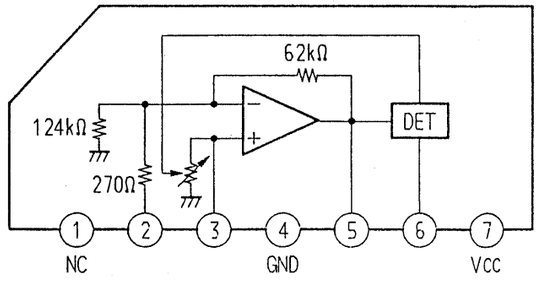
IC302 CXA1102P (AUDIO BOARD)



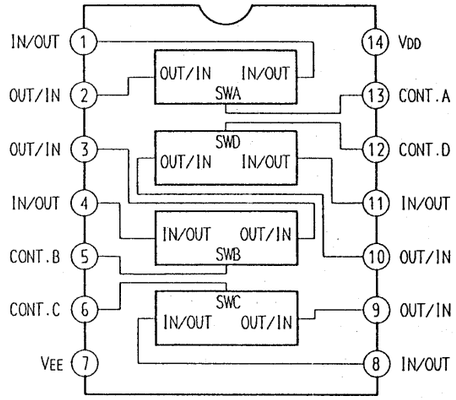
IC303 μPC1330HA (AUDIO BOARD)



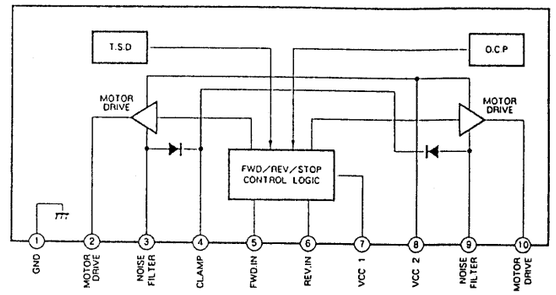
IC304 TA2011S (AUDIO BOARD)



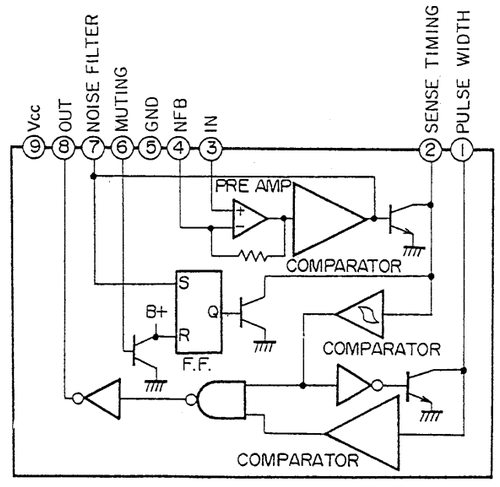
IC305 BU4066B (AUDIO BOARD)



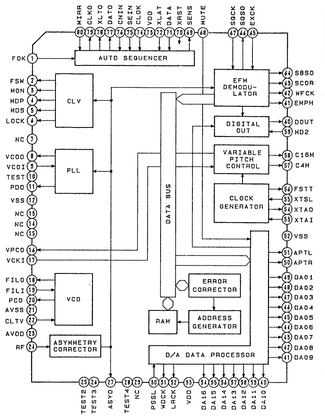
IC601, 602 LB1641 (CONTROL BOARD)



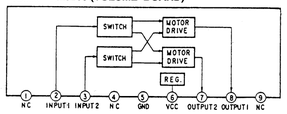
IC603 BA338 (CONTROL BOARD)



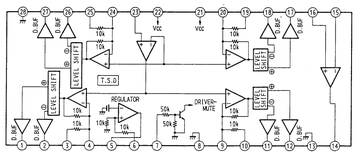
IC702 CXD2500AQ (CD BOARD)



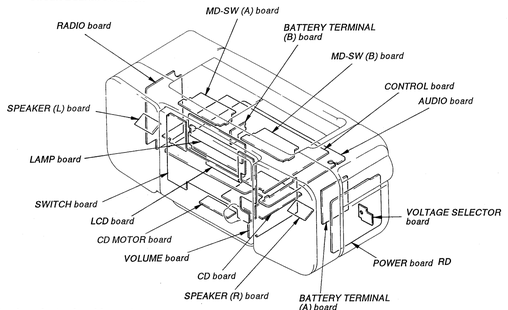
IC710 BA6208 (CD BOARD)
IC906 BA6208 (VOLUME BOARD)



IC703 BA6296FP (CD BOARD)



• Circuit Boards Location



• Semiconductor Lead Layouts

BA338
BA6208

GP1U52XB

LA4620

LB1641

PST5721
RESVA42CA
S-81250HG
S80742AL

TA2011S
TA8176SN
μPC1330HA

1SR139-100
1SS119
RD10ES-B1
RD20ES-B2
RD5.6ES-B2
RD8.2ES-B2

1T33

U15G

2SB1013-4
2SC2001-LK

2SB734-34

2SC2785-HFE
DTC343TS

2SC3070

2SD1944-K
2SD2012

2SK105A-30

2SK514-H
letter side

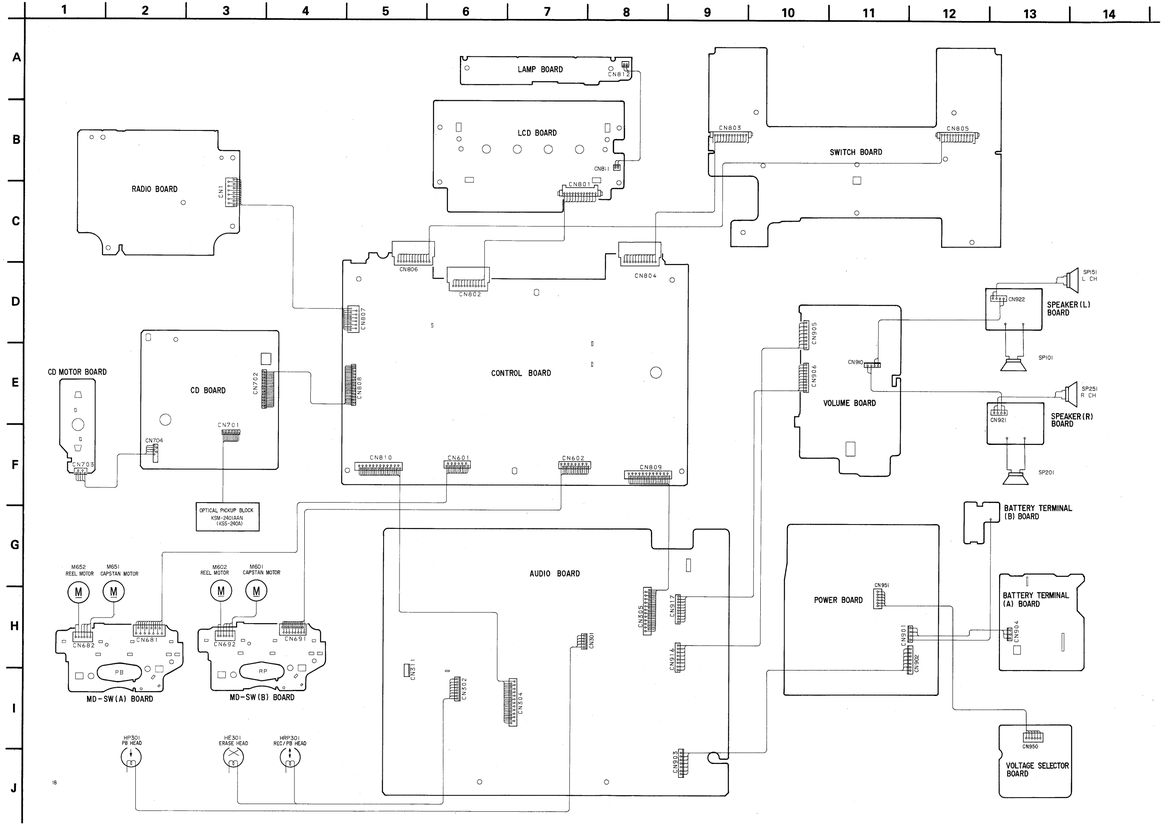
2SK679A

DTA143ZS
DTC114YS
DTC143TS

MPG3371X-150

MVR5064X

5-2. FRAME SCHEMATIC DIAGRAM



5-3. CD/RADIO SECTION PRINTED WIRING BOARDS

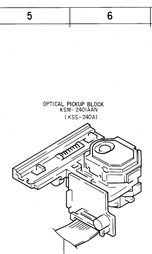
• See page 48 for Semiconductor Lead Layouts.

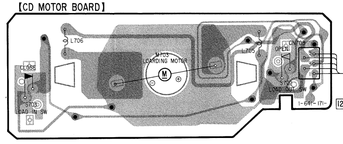
• **Semiconductor Location**

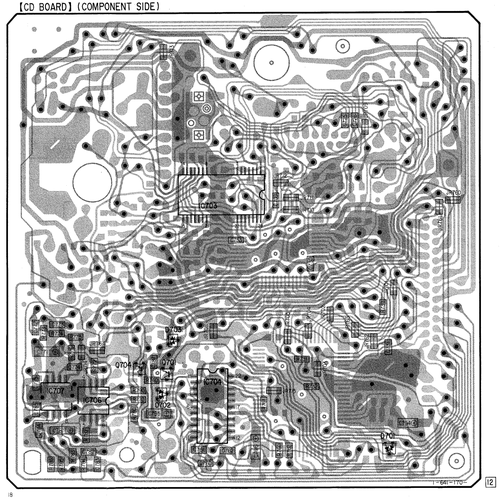
Ref. No.	Location
D1	F-18
D3	C-19
D5	C-20
D6	C-21
D7	E-16
D8	C-16
D681	J-20
D691	J-15
D701	J-6
D702	I-3
D703	H-3
IC1	E-18
IC2	C-18
IC3	D-16
IC701	G-11
IC702	I-10
IC703	G-4
IC704	I-4
IC705	I-12
IC706	I-2
IC707	I-2
IC710	F-12
Q1	C-16
Q4	F-18
Q5	F-19
Q6	F-19
Q7	F-20
Q8	E-21
Q9	D-21
Q10	D-21
Q11	C-21
Q16	B-19
Q17	C-18
Q18	C-19
Q701	I-3
Q703	J-13
Q704	I-3
Q705	H-12
Q706	H-13
Q708	H-13
Q709	H-13
Q710	E-10
Q711	E-9

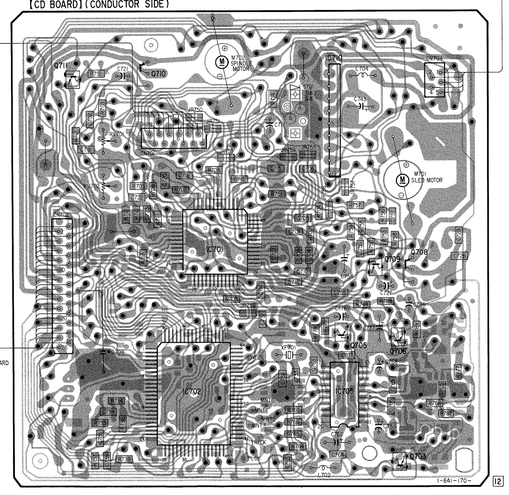
Note:

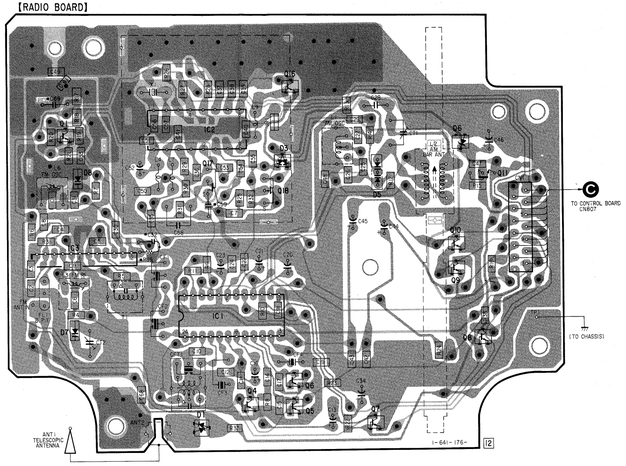
- ○——— : parts extracted from the component side.
- ●——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.

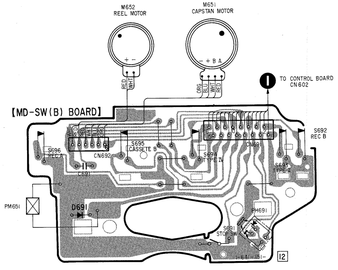


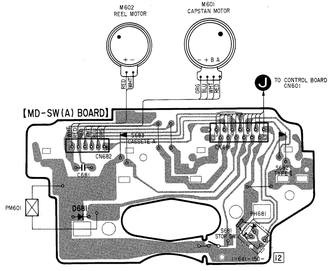






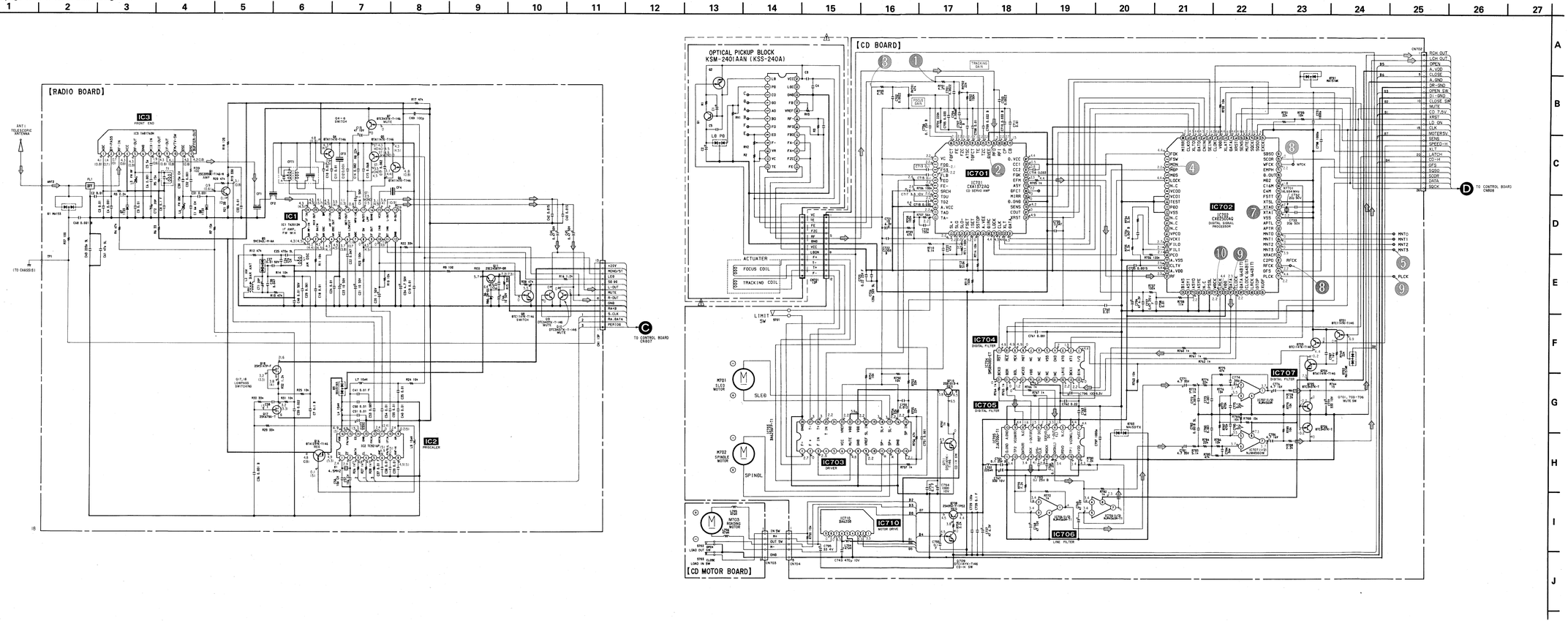




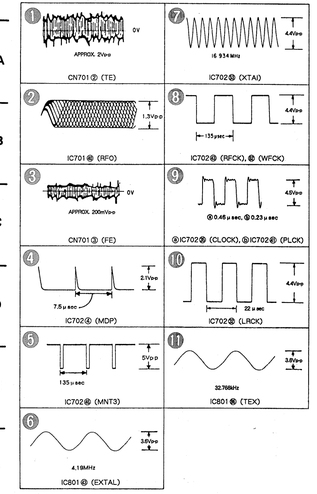


5-4. CD/RADIO SECTION SCHEMATIC DIAGRAM

• See page 45 to 47 for IC Block Diagrams.



• Waveforms (MODE: PLAY)



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ▭▭ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 12 V and fed with regulated dc power supply from external battery terminal (A) board.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or CD
  ( ) : AM
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⇨ : CD

5-5. AUDIO/POWER SECTION PRINTED WIRING BOARDS

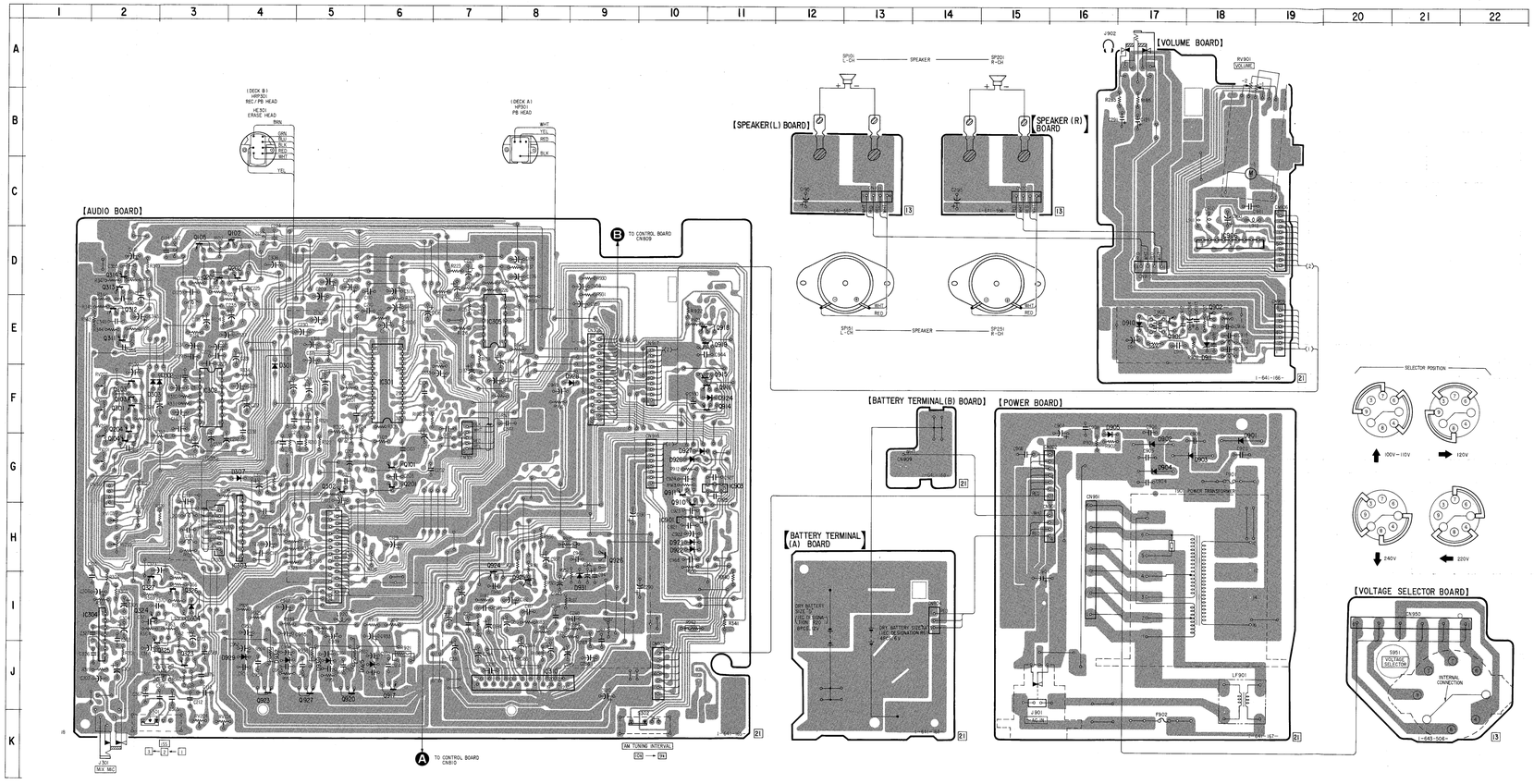
• See page 48 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	F-4	Q103	F-2
D302	F-3	Q104	G-2
D303	F-2	Q105	D-3
D304	I-3	Q201	G-5
D307	G-4	Q202	D-4
D901	G-18	Q203	F-2
D902	G-17	Q204	F-2
D903	G-18	Q205	D-3
D904	G-17	Q301	F-2
D905	F-16	Q302	G-5
D910	E-17	Q311	E-2
D911	E-18	Q312	E-2
D921	H-10	Q313	D-2
D922	H-10	Q314	D-2
D924	F-11	Q323	J-3
D925	J-6	Q324	I-2
D926	G-10	Q325	J-3
D927	G-10	Q326	I-3
D928	F-9	Q327	I-2
D929	J-4	Q901	E-17
D930	J-5	Q902	E-18
D931	I-9	Q910	G-10
D932	J-4	Q911	G-10
		Q914	F-11
IC301	F-6	Q915	F-11
IC302	F-3	Q916	F-11
IC303	H-4	Q917	J-6
IC304	I-2	Q918	E-11
IC305	E-7	Q919	E-11
IC310	J-8	Q920	J-5
IC901	H-10	Q923	J-4
IC903	G-11	Q924	I-7
IC906	D-18	Q925	I-8
		Q926	H-9
Q101	G-6	Q927	J-5
Q102	D-4		

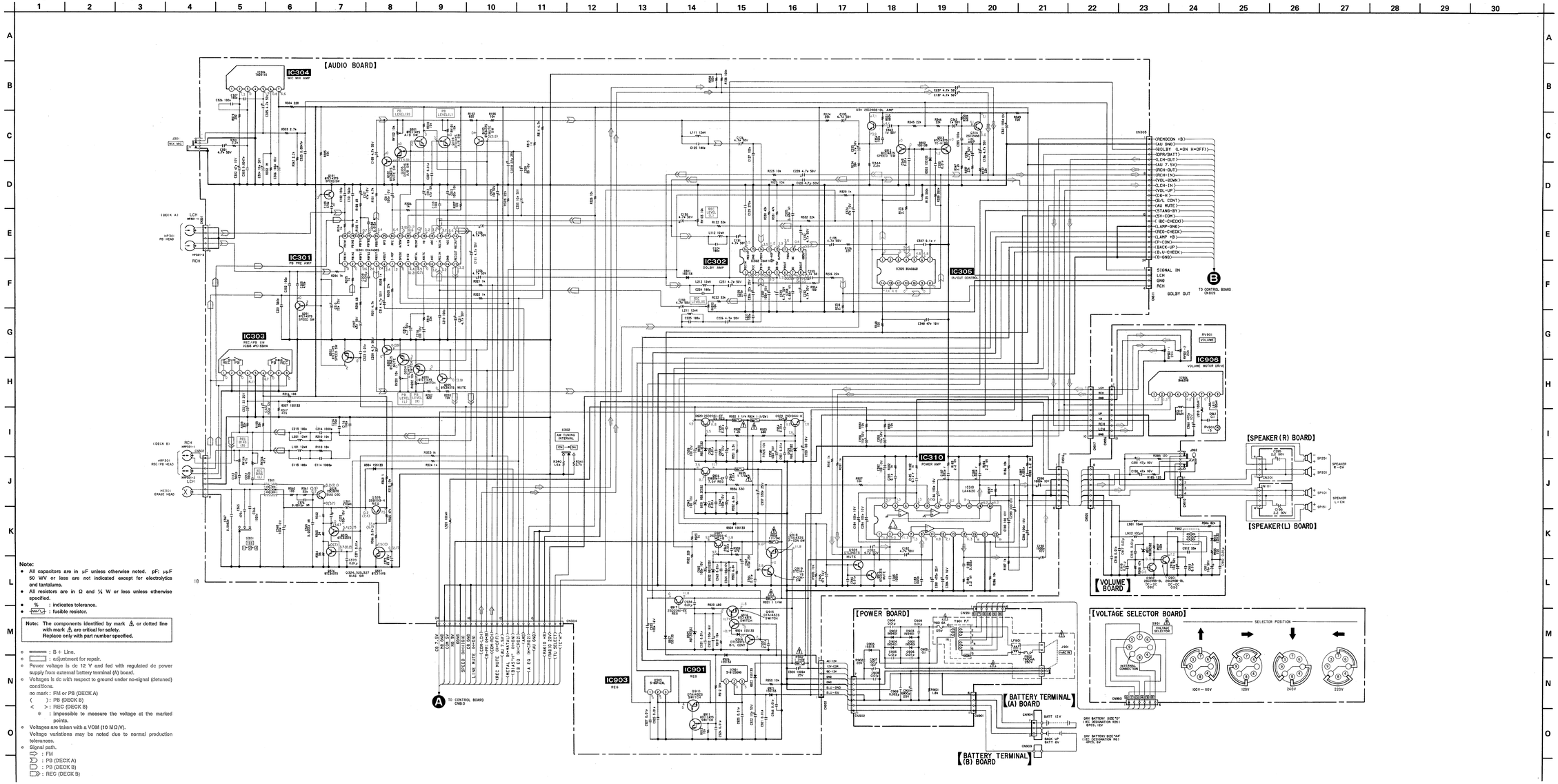
Note:

- ⟜——: parts extracted from the component side.
- ▒▒▒: Pattern on the side which is seen.



5-6. AUDIO/POWER SECTION SCHEMATIC DIAGRAM

• See page 45 and 46 for IC Block Diagrams.



Note:

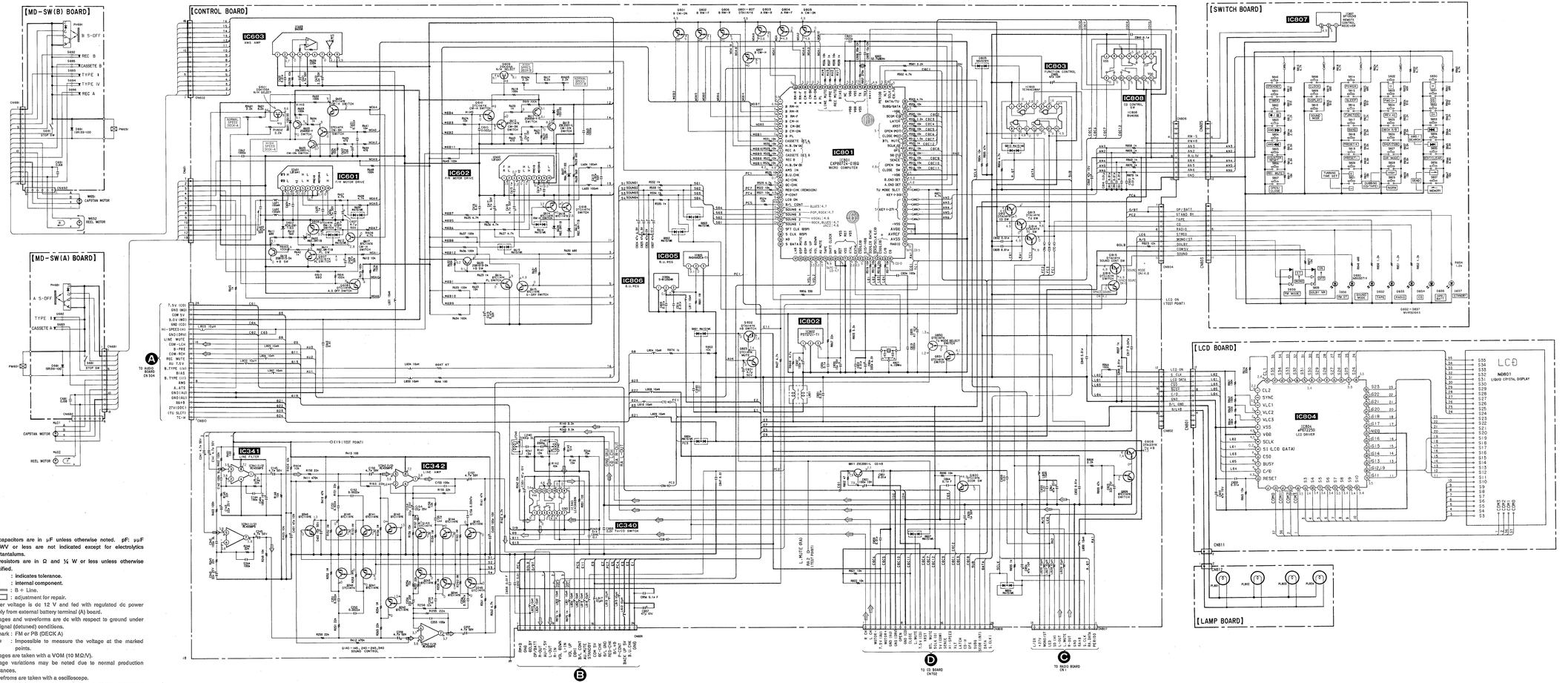
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- : B + Line.
- : adjustment for repair.
- Power voltage is dc 12 V and fed with regulated dc power supply from external battery terminal (A) board.
- Voltages is dc with respect to ground under no-signal (detuned) conditions.
  - no mark : FM or PB (DECK A)
  - ( ) : PB (DECK B)
  - < > : REC (DECK B)
  - * : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - : FM
  - : PB (DECK A)
  - : PB (DECK B)
  - : REC (DECK B)

5-7. CONTROL/LCD SECTION SCHEMATIC DIAGRAM

• See page 46 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭▭ : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 12 V and fed with regulated dc power supply from external battery terminal (A) board.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM or PB (DECK A)
  ✻ : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⇨ : CD

• Semiconductor Location

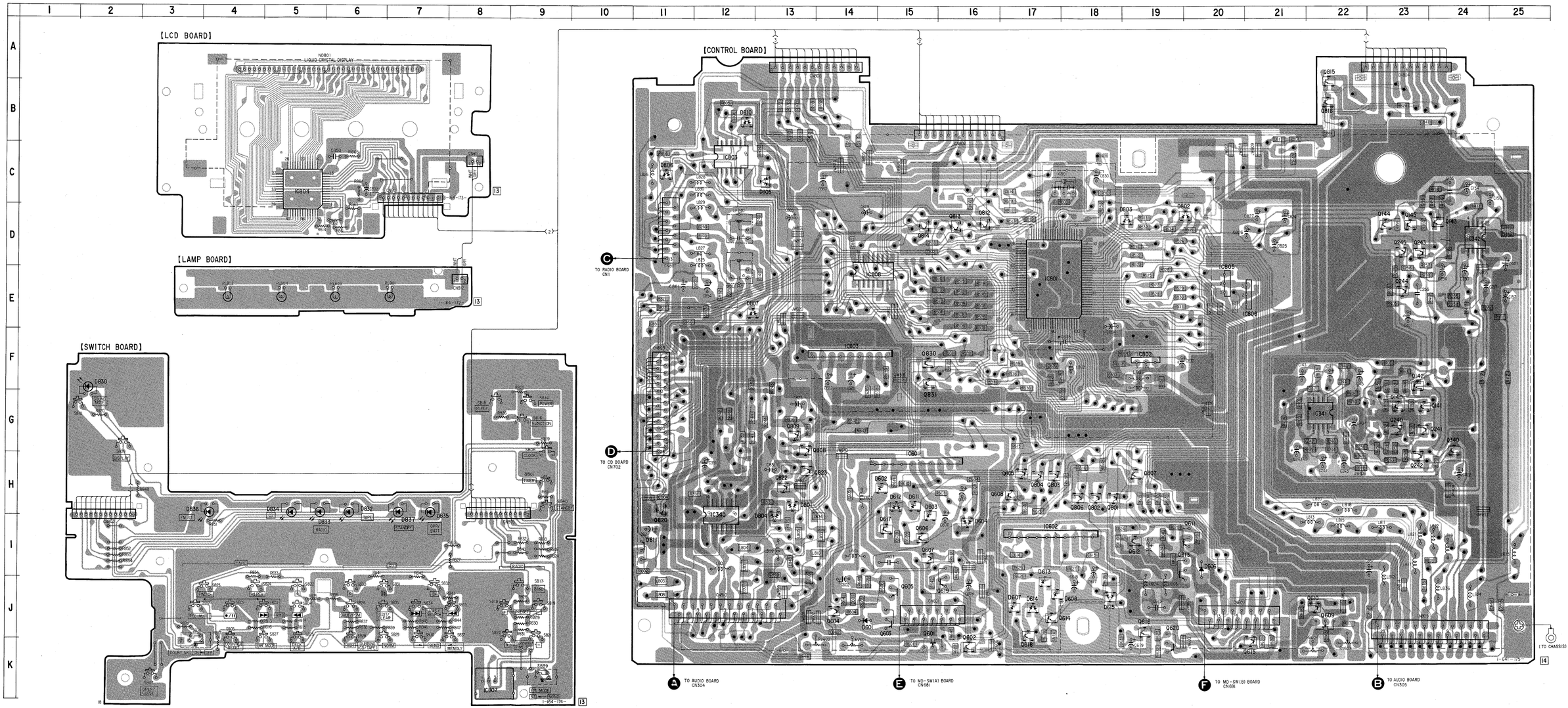
Ref. No.	Location	Ref. No.	Location
D601	J-14	Q145	D-23
D602	H-15	Q240	D-23
D603	H-15	Q241	G-23
D604	I-16	Q242	H-23
D606	I-20	Q243	D-23
D607	J-17	Q244	E-23
D608	J-17	Q245	D-23
D611	H-15	Q340	G-24
D612	H-15	Q601	K-15
D613	J-17	Q602	K-16
D614	J-17	Q603	J-15
D615	J-18	Q604	J-14
D801	H-13	Q805	J-15
D802	D-20	Q606	I-15
D803	D-19	Q607	I-15
D804	H-13	Q608	H-17
D805	C-13	Q609	J-22
D806	C-11	Q610	J-22
D807	E-12	Q611	I-20
D810	B-12	Q812	I-19
D830	F-2	Q613	I-20
D832	H-6	Q614	J-17
D833	H-5	Q615	K-21
D834	H-5	Q616	J-19
D836	H-7	Q617	I-15
D837	H-7	Q618	K-17
		Q619	J-16
IC340	H-12	Q620	K-19
IC341	G-22	Q801	H-18
IC342	D-24	Q802	H-18
IC601	H-15	Q803	H-17
IC602	I-15	Q804	H-17
IC603	F-14	Q805	H-17
IC801	E-17	Q806	H-18
IC802	F-20	Q807	H-19
IC803	C-12	Q808	G-13
IC804	C-5	Q809	G-13
IC805	E-20	Q812	I-11
IC806	E-21	Q813	D-16
IC807	K-8	Q814	D-16
IC808	E-14	Q815	D-15
		Q816	A-22
Q140	G-23	Q820	B-22
Q141	G-23	Q822	H-11
Q142	F-23	Q823	H-13
Q143	D-24	Q830	F-15
Q144	D-23	Q831	F-15

Note:

- ○——○ : parts extracted from the component side.
- ●——● : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

5-8. CONTROL/LCD SECTION PRINTED WIRING BOARDS

• See page 48 for Semiconductor Lead Layouts.



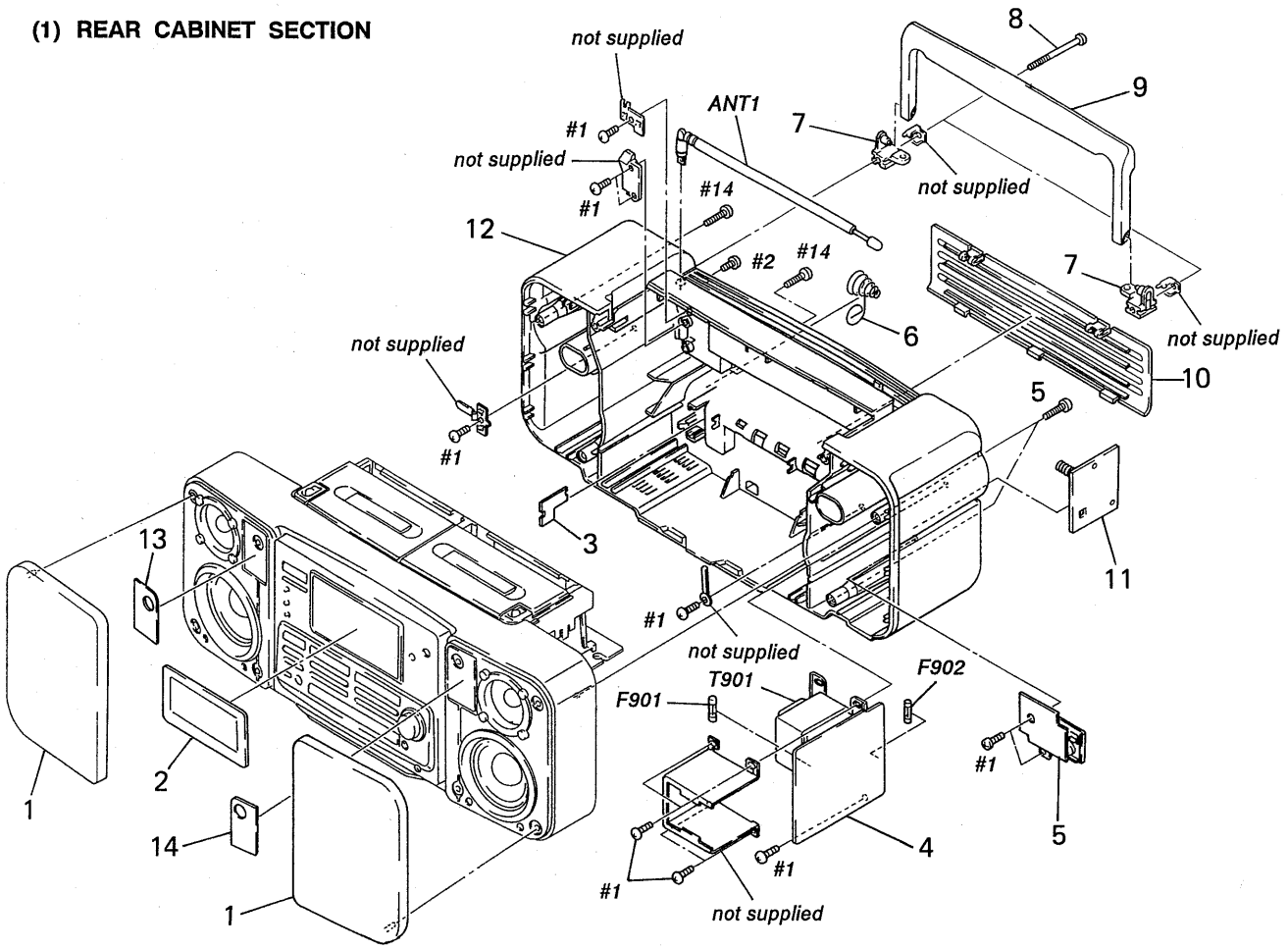
SECTION 6
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

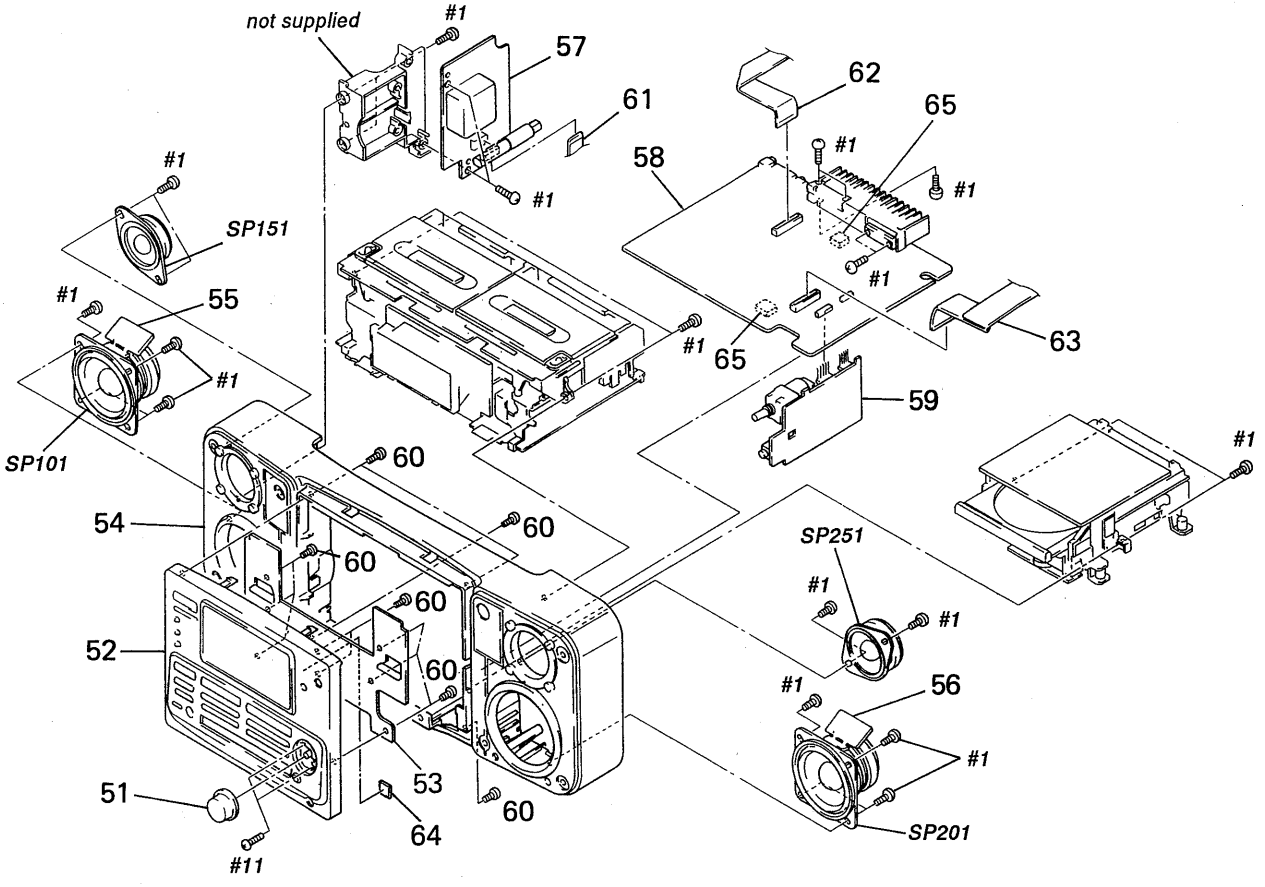
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-3363-658-1	FRAME ASSY, SP	
2	3-372-399-11	LCD WINDOW (27)	
* 3	1-641-169-11	BATTERY TERMINAL (B) BOARD	
* 4	1-641-167-11	POWER BOARD	
* 5	1-643-506-13	VOLTAGE SELECTOR BOARD	
6	3-372-395-01	SPRING (+ -), BATTERY COIL	
7	3-372-411-01	HOLDER, HANDLE	
8	4-947-182-01	SCREW +BVTP 3X50	
9	3-372-421-01	HANDLE	
10	3-372-420-01	LID, BATTERY CASE	
* 11	1-641-168-11	BATTERY TERMINAL (A) BOARD	
12	X-3364-897-1	CABINET (REAR) ASSY	
13	3-375-016-01	PANEL (L), SP	
14	3-375-015-01	PANEL (R), SP	
ANT1	1-501-480-11	ANTENNA, TELESCOPIC	
⚠F901	1-576-110-11	FUSE 6.0A 125V	
⚠F902	1-532-284-00	FUSE, TIME-LAG T630mA 250V	
⚠T901	1-450-887-11	TRANSFORMER, POWER	

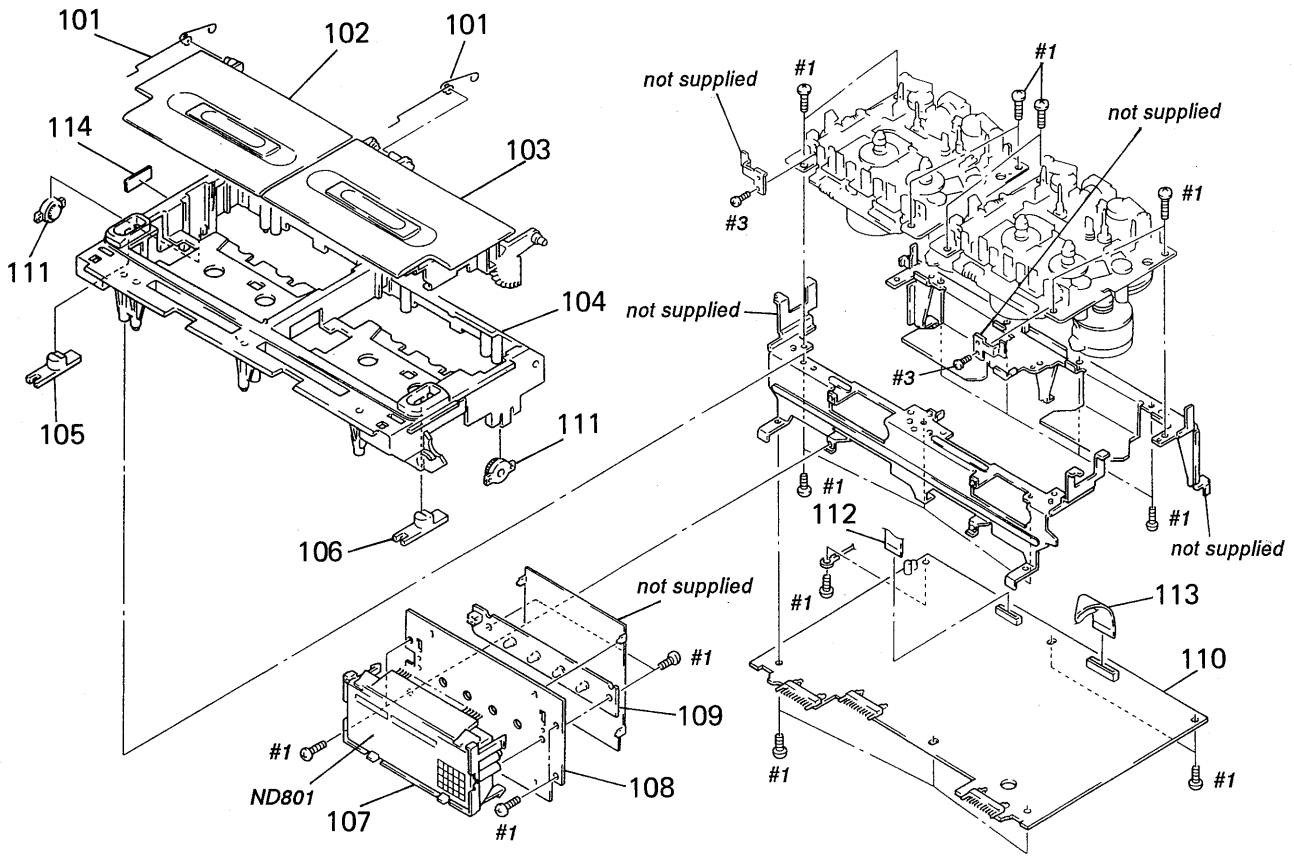
(2) CABINET SECTION



Ref. No.	Part No.	Description	Remark
51	3-372-401-01	KNOB (VOL)	
52	X-3363-657-1	PANEL ASSY, FRONT (27)	
* 53	1-641-174-11	SWITCH BOARD	
54	3-372-431-01	CABINET (FRONT)	
* 55	1-641-557-11	SPEAKER (L) BOARD	
* 56	1-641-558-11	SPEAKER (R) BOARD	
* 57	A-3275-368-A	RADIO BOARD, COMPLETE	
* 58	A-3275-367-A	AUDIO BOARD, COMPLETE	
* 59	1-641-166-11	VOLUME BOARD	
60	4-931-757-31	SCREW(DIA. 2. 6X8) (IT3B), TAPPING	

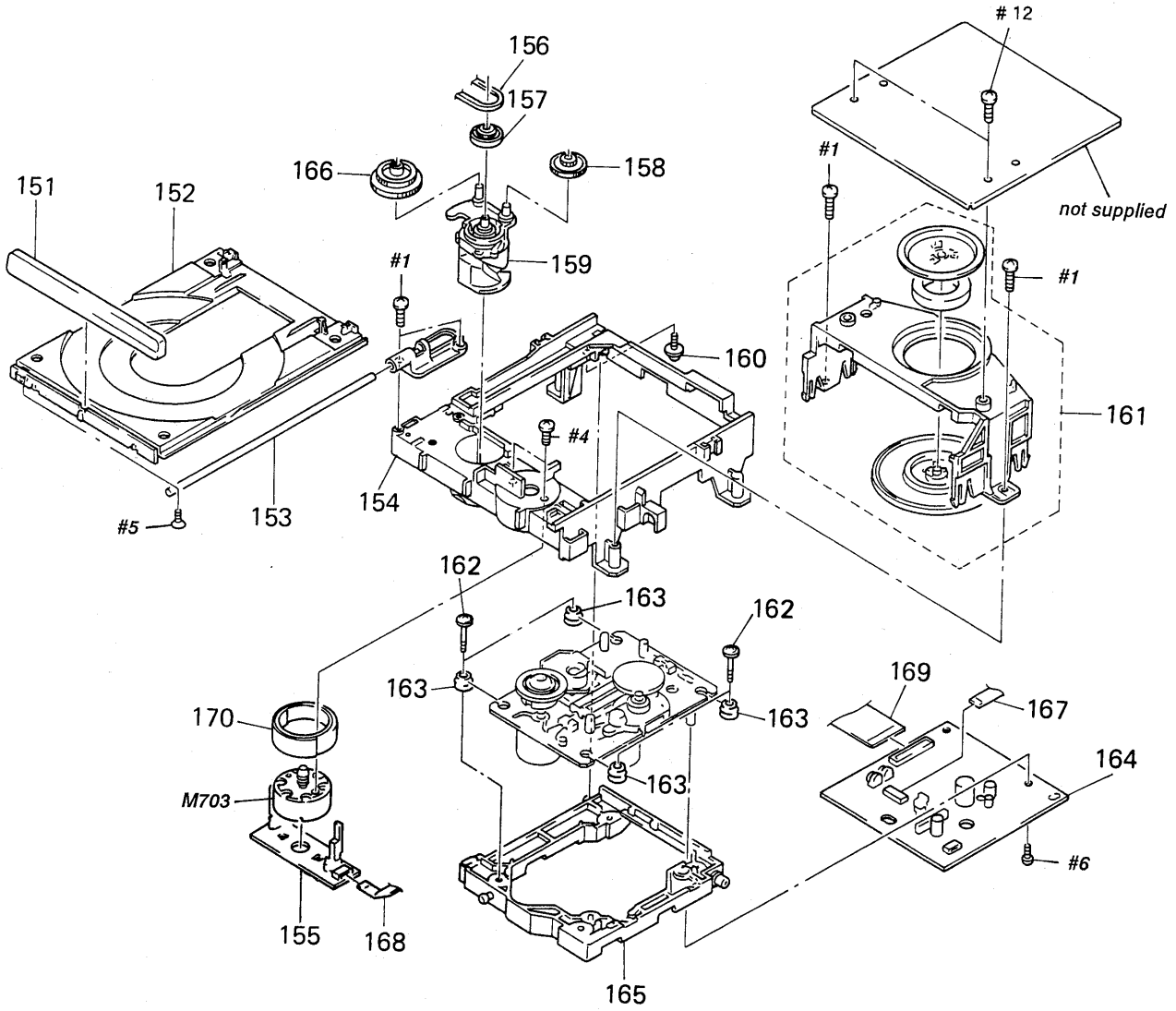
Ref. No.	Part No.	Description	Remark
61	1-690-474-11	WIRE, PARALLEL (FFC) (13 CORE)	
62	1-690-475-11	WIRE, PARALLEL (FFC) (24 CORE)	
63	1-690-476-11	WIRE, PARALLEL (FFC) (24 CORE)	
64	9-911-845-XX	RETAINER, PC BOARD	
65	9-911-841-XX	CUSHION	
SP101	1-544-571-11	SPEAKER	
SP151	1-544-570-11	SPEAKER	
SP201	1-544-571-11	SPEAKER	
SP251	1-544-570-11	SPEAKER	

(3) MD CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
101	3-372-390-01	SPRING (MD), UP	
102	X-3363-653-1	HOLDER (A) ASSY, CASSETTE	
103	X-3363-654-1	HOLDER (B) ASSY, CASSETTE	
104	3-372-443-01	CABINET (UPPER)	
105	3-372-409-01	BUTTON (L), EJECT	
106	3-372-410-01	BUTTON (R), EJECT	
* 107	3-372-414-01	HOLDER (27), LCD	
* 108	1-641-173-11	LCD BOARD	
* 109	1-641-172-11	LAMP BOARD	
* 110	A-3275-365-A	CONTROL BOARD, COMPLETE	
111	3-343-248-01	DAMPER (P), SMALL	
112	1-690-472-11	WIRE, PARALLEL (FFC) (13 CORE)	
113	1-690-473-21	WIRE, PARALLEL (FFC) (16 CORE)	
114	9-911-837-XX	CUSHION(A), FILTER	
ND801	1-809-522-11	DISPLAY PANEL, LIQUID CRYSTAL	

(4) CD CHASSIS SECTION

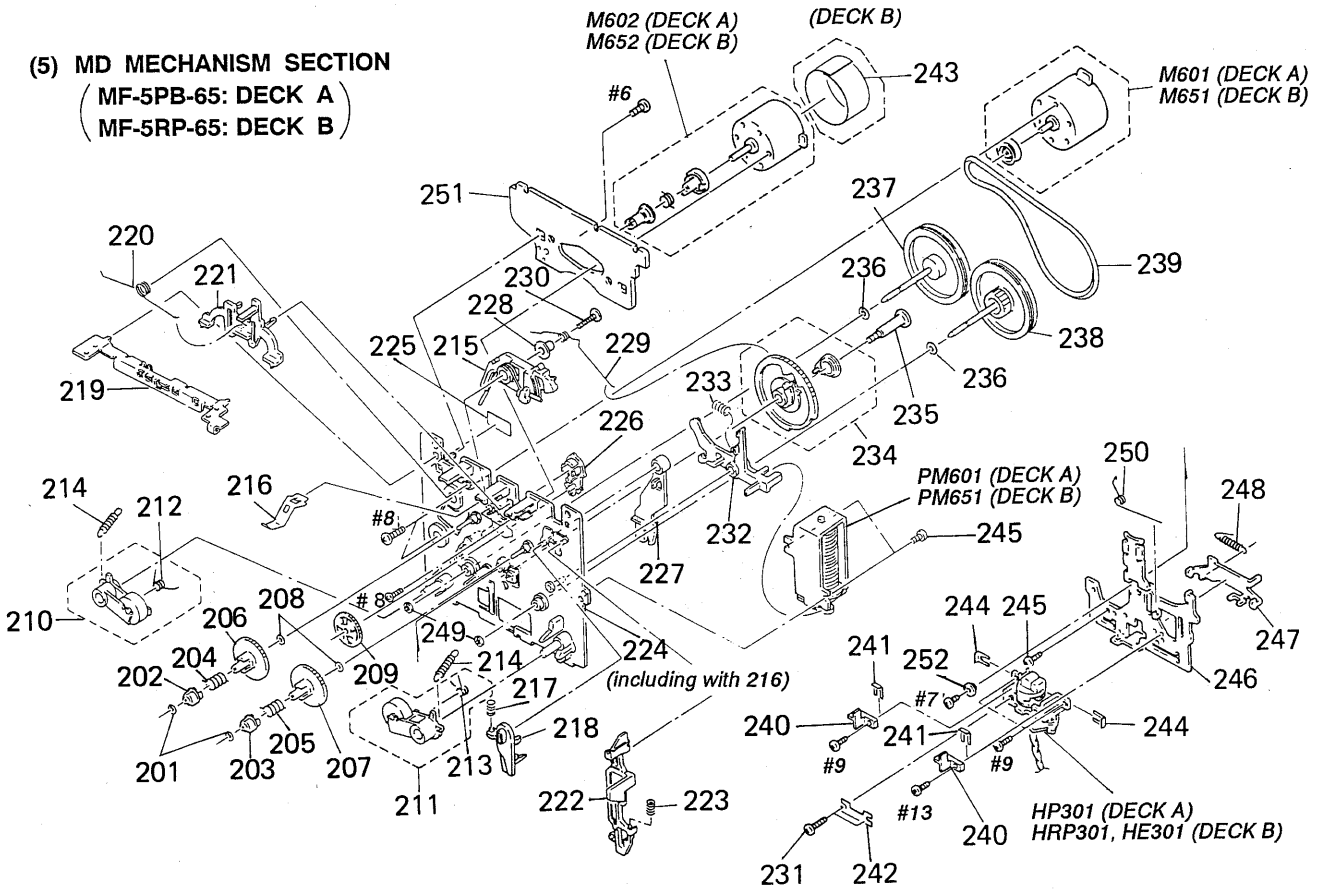


Ref. No.	Part No.	Description	Remark
151	3-372-415-01	PANEL, CD	
152	3-372-430-01	TABLE, DISC	
153	4-929-764-01	SHAFT (TABLE GUIDE)	
* 154	3-372-428-01	CHASSIS	
* 155	1-641-171-11	CD MOTOR BOARD	
156	4-927-649-01	BELT	
157	3-375-087-01	PULLEY (S)	
158	3-375-088-01	GEAR (C)	
159	3-372-419-01	CAM	
* 160	4-917-583-21	BRACKET, YOKE	
161	X-3363-656-1	HOLDER (MG) ASSY	

Ref. No.	Part No.	Description	Remark
162	4-931-373-01	SCREW, CD FITTING	
163	4-922-858-11	DAMPER	
* 164	A-3275-373-A	CD BOARD, COMPLETE	
* 165	X-3363-652-1	HOLDER (BU) ASSY	
166	4-927-620-01	GEAR (P)	
167	1-690-477-11	WIRE, PARALLEL (FFC) (12 CORE)	
168	1-690-478-11	WIRE, PARALLEL (FFC) (5 CORE)	
169	1-690-479-11	WIRE, PARALLEL (FFC) (26 CORE)	
170	3-162-496-01	CORE, SHEELD	
M703	X-3364-850-1	SUB ASSY, MOTOR (LOADING)	

(5) MD MECHANISM SECTION

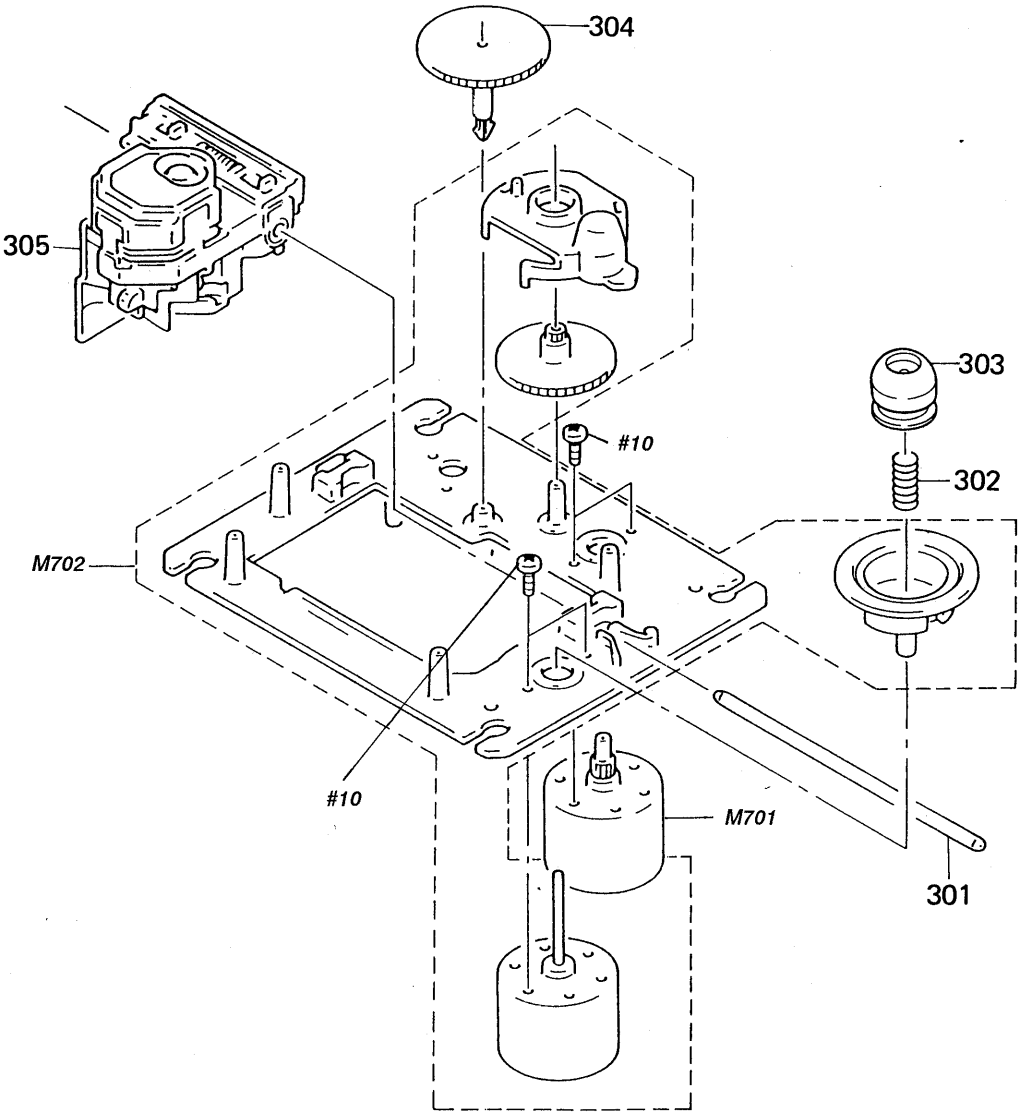
(MF-5PB-65: DECK A
MF-5RP-65: DECK B)



Ref. No.	Part No.	Description	Remark
201	3-578-223-21	WASHER, NYLON	
202	3-362-481-01	CLAW (S), REEL	
203	3-362-480-01	CLAW (T), REEL	
204	3-362-831-02	SPRING (RS), TORSION	
205	3-362-830-02	SPRING (RT), TORSION	
206	A-3130-037-A	GEAR (REEL) ASSY	
207	3-362-482-01	GEAR (REEL)	
208	3-701-437-51	WASHER	
209	3-362-483-01	GEAR (DRIVING A)	
210	X-3306-509-1	LEVER (R) ASSY, P	
211	X-3306-508-1	LEVER (N) ASSY, PC	
212	3-360-316-01	SPRING (R), TORSION	
213	3-360-315-01	SPRING (N), TORSION	
214	4-602-490-00	SPRING, TENSION	
215	X-3306-511-1	LINK (LIMITER) ASSY	
216	3-360-328-01	PLATE, CASSETTE	
217	3-360-336-01	SPRING, COMPRESSION	
218	3-360-324-01	LEVER, AMS	
219	3-360-312-01	PLATE, SW RETURN	
220	3-360-310-01	SPRING (BRAKE), TORSION	
221	3-360-348-01	BRAKE	
222	3-360-307-01	SLIDER (EJECT)	
223	3-363-790-01	SPRING, COMPRESSION	
224	X-3306-546-1	SHASSIS (M) ASSY	
225	3-831-441-XX	SPACER	
226	3-306-599-01	ARM, DRIVING	
227	3-360-306-01	LEVER, N	
228	3-363-146-01	SLEEVE, SPRING RETAINER	
229	3-360-337-05	SPRING (CAM), TORSION	
230	3-344-728-01	SCREW (B1.4), TAPPING	
231	3-344-788-01	SCREW, AZIMUTH ADJUSTMENT	
232	3-360-304-01	LEVER, PL	
233	3-344-751-01	SPRING, COMPRESSION	

Ref. No.	Part No.	Description	Remark
234	X-3362-641-1	GEAR ASSY, CAM	
235	3-364-608-02	SCREW (M2.6X11.6X3.5), STEP	
236	3-701-437-11	WASHER	
237	X-3306-513-1	FLYWHEEL (R) ASSY	
238	X-3306-512-1	FLYWHEEL (N) ASSY	
239	3-360-327-01	BELT	
240	3-369-480-01	GUIDE (R)	
241	4-932-603-01	SHIM (t=0.1)	
241	4-932-603-11	SHIM (t=0.2)	
242	4-930-440-01	SPRING	
* 243	3-162-496-01	CORE, SHIELD	
244	3-336-274-01	SHIM (t=0.1)	
244	3-336-274-11	SHIM (t=0.2)	
244	3-336-274-21	SHIM (t=0.3)	
245	3-363-433-02	SCREW	
* 246	X-3363-207-1	BASE ASSY, HEAD	
* 247	X-3362-073-2	SLIDER (NR2) ASSY	
248	3-363-432-01	SPRING, TENSION	
249	3-343-358-12	RING, RETAINING	
250	3-360-321-01	SPRING, TORSION	
* 251	1-641-150-11	MD-SW (A) BOARD... (DECK A)	
* 251	1-641-151-11	MD-SW (B) BOARD... (DECK B)	
252	3-362-801-01	COLLAR (HED BASE)	
252	3-362-801-01	COLLAR (HED)	
HE301	A-3253-103-A	HEAD ASSY, ROTARY... (DECK B)	
HP301	A-3253-099-A	HEAD ASSY, ROTARY... (DECK A)	
HRP301	A-3253-103-A	HEAD ASSY, ROTARY... (DECK B)	
M601	A-3133-405-A	MOTOR ASSY, CAPSTAN... (DECK A)	
M651	A-3133-405-A	MOTOR ASSY, CAPSTAN... (DECK B)	
M602	A-3253-101-A	MOTOR ASSY, REEL... (DECK A)	
M652	A-3253-105-A	MOTOR ASSY, REEL... (DECK B)	
PM601	1-454-533-11	SOLENOID, PLUNGER... (DECK A)	
PM651	1-454-533-11	SOLENOID, PLUNGER... (DECK B)	

(6) OPTICAL PICK-UP SECTION (KSM-2401AAN)



Ref. No.	Part No.	Description	Remark
301	4-917-565-01	SHAFT (K), SLED	
302	2-625-191-01	SPRING, COMPRESSION	
303	2-625-187-01	RING (LO), CENTER	
304	2-625-188-02	GEAR (A)	

Ref. No.	Part No.	Description	Remark
⚠305	8-848-144-11	OPTICAL PICK-UP KSS-240A	
M701	X-2625-132-1	MOTOR GEAR ASSY (MB) (SLED)	
M702	X-2625-133-2	MOTOR ASSY, SPINDLE (TT CHASSIS ASSY (MB))	

AUDIO

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
*	A-3275-367-A	AUDIO BOARD, COMPLETE			
		**********			
	7-685-647-79	SCREW, TAPPING +BV 3X10			
		< CAPACITOR >			
C101	1-162-291-31	CERAMIC	560PF	10%	50V
C102	1-162-282-31	CERAMIC	100PF	10%	50V
C103	1-162-290-31	CERAMIC	470PF	10%	50V
C106	1-124-927-11	ELECT	4.7uF	20%	100V
C107	1-124-126-00	ELECT	47uF	20%	10V
C108	1-130-485-00	MYLAR	0.015uF	5%	50V
C109	1-124-927-11	ELECT	4.7uF	20%	100V
C110	1-162-282-31	CERAMIC	100PF	10%	50V
C111	1-124-927-11	ELECT	4.7uF	20%	100V
C112	1-162-291-31	CERAMIC	560PF	10%	50V
C113	1-162-285-31	CERAMIC	180PF	10%	50V
C114	1-162-294-31	CERAMIC	0.001uF	10%	50V
C116	1-162-282-31	CERAMIC	100PF	10%	50V
C124	1-162-285-31	CERAMIC	180PF	10%	50V
C125	1-162-285-31	CERAMIC	180PF	10%	50V
C126	1-124-927-11	ELECT	4.7uF	20%	100V
C127	1-162-282-31	CERAMIC	100PF	10%	50V
C128	1-124-927-11	ELECT	4.7uF	20%	100V
C129	1-162-287-31	CERAMIC	270PF	10%	50V
C130	1-124-927-11	ELECT	4.7uF	20%	100V
C131	1-124-927-11	ELECT	4.7uF	20%	100V
C132	1-124-927-11	ELECT	4.7uF	20%	100V
C133	1-124-927-11	ELECT	4.7uF	20%	100V
C135	1-124-927-11	ELECT	4.7uF	20%	100V
C136	1-124-927-11	ELECT	4.7uF	20%	100V
C137	1-124-927-11	ELECT	4.7uF	20%	100V
C182	1-124-927-11	ELECT	4.7uF	20%	100V
C183	1-162-294-31	CERAMIC	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C184	1-124-443-00	ELECT	100uF	20%	10V
C185	1-136-165-00	FILM	0.1uF	5%	50V
C186	1-124-443-00	ELECT	100uF	20%	10V
C187	1-136-159-00	FILM	0.033uF	5%	50V
C188	1-136-159-00	FILM	0.033uF	5%	50V
C189	1-124-443-00	ELECT	100uF	20%	10V
C190	1-126-926-11	ELECT	1000uF	20%	10V
C201	1-162-291-31	CERAMIC	560PF	10%	50V
C202	1-162-282-31	CERAMIC	100PF	10%	50V
C203	1-162-290-31	CERAMIC	470PF	10%	50V
C206	1-124-927-11	ELECT	4.7uF	20%	100V
C207	1-124-126-00	ELECT	47uF	20%	10V
C208	1-130-485-00	MYLAR	0.015uF	5%	50V
C209	1-124-927-11	ELECT	4.7uF	20%	100V
C210	1-162-282-31	CERAMIC	100PF	10%	50V
C211	1-124-927-11	ELECT	4.7uF	20%	100V
C212	1-162-291-31	CERAMIC	560PF	10%	50V
C213	1-162-285-31	CERAMIC	180PF	10%	50V
C214	1-162-294-31	CERAMIC	0.001uF	10%	50V
C216	1-162-282-31	CERAMIC	100PF	10%	50V
C224	1-162-285-31	CERAMIC	180PF	10%	50V
C225	1-162-285-31	CERAMIC	180PF	10%	50V
C226	1-124-927-11	ELECT	4.7uF	20%	100V
C227	1-162-282-31	CERAMIC	100PF	10%	50V
C228	1-124-927-11	ELECT	4.7uF	20%	100V
C229	1-162-287-31	CERAMIC	270PF	10%	50V
C230	1-124-927-11	ELECT	4.7uF	20%	100V
C231	1-124-927-11	ELECT	4.7uF	20%	100V
C232	1-124-927-11	ELECT	4.7uF	20%	100V
C233	1-124-927-11	ELECT	4.7uF	20%	100V
C235	1-124-927-11	ELECT	4.7uF	20%	100V
C236	1-124-927-11	ELECT	4.7uF	20%	100V
C237	1-124-927-11	ELECT	4.7uF	20%	100V
C282	1-124-927-11	ELECT	4.7uF	20%	100V

Ref. No.	Part No.	Description			Remark
C283	1-162-294-31	CERAMIC	0.001uF	10%	50V
C284	1-124-443-00	ELECT	100uF	20%	10V
C285	1-136-165-00	FILM	0.1uF	5%	50V
C286	1-124-443-00	ELECT	100uF	20%	10V
C287	1-136-159-00	FILM	0.033uF	5%	50V
C288	1-136-159-00	FILM	0.033uF	5%	50V
C289	1-124-443-00	ELECT	100uF	20%	10V
C290	1-126-926-11	ELECT	1000uF	20%	10V
C301	1-124-927-11	ELECT	4.7uF	20%	100V
C302	1-124-126-00	ELECT	47uF	20%	10V
C303	1-161-377-00	CERAMIC	0.0047uF	30%	16V
C304	1-124-907-11	ELECT	10uF	20%	50V
C305	1-124-927-11	ELECT	4.7uF	20%	100V
C306	1-124-443-00	ELECT	100uF	20%	10V
C307	1-161-379-00	CERAMIC	0.01uF	20%	25V
C308	1-126-233-11	ELECT	22uF	20%	50V
C309	1-124-034-51	ELECT	33uF	20%	16V
C310	1-126-233-11	ELECT	22uF	20%	50V
C311	1-124-443-00	ELECT	100uF	20%	10V
C312	1-124-126-00	ELECT	47uF	20%	10V
C313	1-124-443-00	ELECT	100uF	20%	10V
C314	1-124-927-11	ELECT	4.7uF	20%	100V
C315	1-124-927-11	ELECT	4.7uF	20%	100V
C316	1-124-443-00	ELECT	100uF	20%	10V
C321	1-126-233-11	ELECT	22uF	20%	50V
C322	1-124-443-00	ELECT	100uF	20%	10V
C323	1-161-379-00	CERAMIC	0.01uF	20%	25V
C324	1-124-126-00	ELECT	47uF	20%	10V
C325	1-161-377-00	CERAMIC	0.0047uF	30%	16V
C326	1-162-282-31	CERAMIC	100PF	10%	50V
C327	1-162-285-31	CERAMIC	180PF	10%	50V
C329	1-124-907-11	ELECT	10uF	20%	50V
C333	1-124-907-11	ELECT	10uF	20%	50V
C335	1-136-175-00	FILM	0.68uF	5%	50V
C336	1-126-233-11	ELECT	22uF	20%	50V
C337	1-124-443-00	ELECT	100uF	20%	10V
C338	1-136-175-00	FILM	0.68uF	5%	50V
C339	1-124-927-11	ELECT	4.7uF	20%	100V
C341	1-124-443-00	ELECT	100uF	20%	10V
C342	1-124-903-11	ELECT	1uF	20%	50V
C343	1-124-903-11	ELECT	1uF	20%	50V
C347	1-136-165-00	FILM	0.1uF	5%	50V
C348	1-124-126-00	ELECT	47uF	20%	10V
C349	1-161-379-00	CERAMIC	0.01uF	20%	25V
C350	1-161-379-00	CERAMIC	0.01uF	20%	25V
C354	1-162-282-31	CERAMIC	100PF	10%	50V
C355	1-162-282-31	CERAMIC	100PF	10%	50V
C365	1-137-519-11	FILM	470PF	5%	100V
C366	1-137-520-11	FILM	0.001uF	5%	100V
C367	1-137-521-11	FILM	0.0082uF	5%	100V
C368	1-124-443-00	ELECT	100uF	20%	10V
C369	1-130-477-00	MYLAR	0.0033uF	5%	50V
C370	1-161-379-00	CERAMIC	0.01uF	20%	25V
C371	1-161-379-00	CERAMIC	0.01uF	20%	25V
C372	1-124-443-00	ELECT	100uF	20%	10V
C373	1-126-233-11	ELECT	22uF	20%	50V
C376	1-130-473-00	MYLAR	0.0015uF	5%	50V
C381	1-126-941-11	ELECT	470uF	20%	25V
C382	1-124-443-00	ELECT	100uF	20%	10V
C384	1-124-477-11	ELECT	47uF	20%	25V
C920	1-124-557-11	ELECT	1000uF	20%	25V
C921	1-161-379-00	CERAMIC	0.01uF	20%	25V
C922	1-124-907-11	ELECT	10uF	20%	50V
C923	1-161-379-00	CERAMIC	0.01uF	20%	25V
C924	1-161-379-00	CERAMIC	0.01uF	20%	25V
C925	1-161-379-00	CERAMIC	0.01uF	20%	25V
C927	1-161-379-00	CERAMIC	0.01uF	20%	25V
C930	1-161-379-00	CERAMIC	0.01uF	20%	25V
C931	1-161-379-00	CERAMIC	0.01uF	20%	25V
C932	1-126-933-11	ELECT	100uF	20%	16V
C933	1-126-933-11	ELECT	100uF	20%	16V
C934	1-161-379-00	CERAMIC	0.01uF	20%	25V
C935	1-161-379-00	CERAMIC	0.01uF	20%	25V
C936	1-161-379-00	CERAMIC	0.01uF	20%	25V
C937	1-124-479-11	ELECT	330uF	20%	25V
C938	1-124-126-00	ELECT	47uF	20%	10V
C939	1-124-443-00	ELECT	100uF	20%	10V
C940	1-161-379-00	CERAMIC	0.01uF	20%	25V
C941	1-161-379-00	CERAMIC	0.01uF	20%	25V
C942	1-124-443-00	ELECT	100uF	20%	10V
C943	1-124-443-00	ELECT	100uF	20%	10V
C944	1-161-379-00	CERAMIC	0.01uF	20%	25V
C945	1-124-477-11	ELECT	47uF	20%	25V
C946	1-161-379-00	CERAMIC	0.01uF	20%	25V
C951	1-161-379-00	CERAMIC	0.01uF	20%	25V
C952	1-124-443-00	ELECT	100uF	20%	10V
C953	1-124-443-00	ELECT	100uF	20%	10V
C954	1-161-379-00	CERAMIC	0.01uF	20%	25V
C958	1-124-907-11	ELECT	10uF	20%	50V
C959	1-124-907-11	ELECT	10uF	20%	50V
C962	1-161-379-00	CERAMIC	0.01uF	20%	25V
C963	1-161-379-00	CERAMIC	0.01uF	20%	25V
C964	1-124-443-00	ELECT	100uF	20%	10V
C965	1-124-443-00	ELECT	100uF	20%	10V
C966	1-161-379-00	CERAMIC	0.01uF	20%	25V
C967	1-126-941-11	ELECT	470uF	20%	25V

AUDIO

Ref.No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN301	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P	
* CN302	1-506-990-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN304	1-691-056-11	HOUSING, CONNECTOR 24P	
* CN305	1-691-056-11	HOUSING, CONNECTOR 24P	
* CN311	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN903	1-564-510-11	PLUG, CONNECTOR 7P	
* CN916	1-566-970-11	HOUSING, CONNECTOR(PC BOARD)8P	
* CN917	1-568-451-11	HOUSING, CONNECTOR(PC BOARD)10P	
		< DIODE >	
D301	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	
D303	8-719-911-19	DIODE 1SS119	
D304	8-719-911-19	DIODE 1SS119	
D307	8-719-911-19	DIODE 1SS119	
D921	8-719-911-19	DIODE 1SS119	
D922	8-719-911-19	DIODE 1SS119	
D924	8-719-911-19	DIODE 1SS119	
D925	8-719-110-03	DIODE RD7.5ES-B2	
D926	8-719-911-19	DIODE 1SS119	
D927	8-719-911-19	DIODE 1SS119	
D928	8-719-911-19	DIODE 1SS119	
D929	8-719-110-08	DIODE RD8.2ES-B2	
D930	8-719-109-89	DIODE RD5.6ES-B2	
D931	8-719-110-08	DIODE RD8.2ES-B2	
D932	8-719-110-16	DIODE RD10ES-B1	
		< IC >	
IC301	8-752-053-85	IC CXA1498S	
IC302	8-752-057-20	IC CXA1102P	
IC303	8-759-143-54	IC uPC1330HA	
IC304	8-759-246-69	IC TA2011S	
IC305	8-759-932-33	IC BU4066B	
IC310	8-759-822-51	IC LA4620	
IC901	8-759-912-55	IC S-81250HG	
IC903	8-759-516-64	IC S80742AL	
		< JACK >	
J301	1-573-914-11	JACK (MIX MIC)	
		< COIL >	
L101	1-410-776-11	INDUCTOR 12mH	
L111	1-410-776-11	INDUCTOR 12mH	
L112	1-410-776-11	INDUCTOR 12mH	
L201	1-410-776-11	INDUCTOR 12mH	
L211	1-410-776-11	INDUCTOR 12mH	
L212	1-410-776-11	INDUCTOR 12mH	
L301	1-408-426-00	INDUCTOR 270uH	
L920	1-408-080-00	INDUCTOR 100uH	
		< TRANSISTOR >	
Q101	8-729-900-74	TRANSISTOR DTC143TS	
Q102	8-729-905-50	TRANSISTOR DTC343TS	
Q103	8-729-904-36	TRANSISTOR DTC114YS	
Q104	8-729-904-36	TRANSISTOR DTC114YS	
Q105	8-729-905-50	TRANSISTOR DTC343TS	
Q201	8-729-900-74	TRANSISTOR DTC143TS	
Q202	8-729-905-50	TRANSISTOR DTC343TS	
Q203	8-729-904-36	TRANSISTOR DTC114YS	
Q204	8-729-904-36	TRANSISTOR DTC114YS	
Q205	8-729-905-50	TRANSISTOR DTC343TS	
Q301	8-729-904-36	TRANSISTOR DTC114YS	
Q302	8-729-904-36	TRANSISTOR DTC114YS	
Q311	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q312	8-729-900-74	TRANSISTOR DTC143TS	
Q313	8-729-900-74	TRANSISTOR DTC143TS	
Q314	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q323	8-729-800-34	TRANSISTOR 2SC3070	
Q324	8-729-905-50	TRANSISTOR DTC343TS	
Q325	8-729-905-50	TRANSISTOR DTC343TS	
Q326	8-729-801-84	TRANSISTOR 2SB1013-4	
Q327	8-729-904-36	TRANSISTOR DTC114YS	
Q910	8-729-925-60	TRANSISTOR DTA143ZS	
Q911	8-729-904-36	TRANSISTOR DTC114YS	
Q914	8-729-900-74	TRANSISTOR DTC143TS	
Q915	8-729-925-60	TRANSISTOR DTA143ZS	
Q916	8-729-900-74	TRANSISTOR DTC143TS	
Q917	8-729-209-15	TRANSISTOR 2SD2012	
Q918	8-729-925-60	TRANSISTOR DTA143ZS	
Q919	8-729-904-36	TRANSISTOR DTC114YS	
Q920	8-729-209-15	TRANSISTOR 2SD2012	
Q923	8-729-905-67	TRANSISTOR 2SD1944-K	
Q924	8-729-905-50	TRANSISTOR DTC343TS	
Q925	8-729-905-50	TRANSISTOR DTC343TS	
Q926	8-729-209-15	TRANSISTOR 2SD2012	
Q927	8-729-905-67	TRANSISTOR 2SD1944-K	
		< RESISTOR >	
R101	1-249-425-11	CARBON 4.7K 5% 1/4W	
R102	1-249-416-11	CARBON 820 5% 1/4W	
R103	1-249-429-11	CARBON 10K 5% 1/4W	
R104	1-249-417-11	CARBON 1K 5% 1/4W	
R105	1-249-417-11	CARBON 1K 5% 1/4W	
R108	1-249-403-11	CARBON 68 5% 1/4W	
R109	1-249-435-11	CARBON 33K 5% 1/4W	

Ref. No.	Part No.	Description				Remark
R110	1-249-429-11	CARBON	10K	5%	1/4W	
R122	1-249-435-11	CARBON	33K	5%	1/4W	
R123	1-249-429-11	CARBON	10K	5%	1/4W	
R124	1-249-436-11	CARBON	39K	5%	1/4W	
R125	1-247-840-00	CARBON	2.4K	5%	1/4W	
R126	1-249-433-11	CARBON	22K	5%	1/4W	
R137	1-249-433-11	CARBON	22K	5%	1/4W	
R138	1-249-441-11	CARBON	100K	5%	1/4W	
R139	1-247-893-11	CARBON	390K	5%	1/4W	
R181	1-249-417-11	CARBON	1K	5%	1/4W	
R182	1-249-417-11	CARBON	1K	5%	1/4W	
R183	1-249-385-11	CARBON	2.2	5%	1/6W	
R184	1-249-385-11	CARBON	2.2	5%	1/6W	
R186	1-249-429-11	CARBON	10K	5%	1/4W	
R187	1-249-417-11	CARBON	1K	5%	1/4W	
R201	1-249-425-11	CARBON	4.7K	5%	1/4W	
R202	1-249-416-11	CARBON	820	5%	1/4W	
R203	1-249-429-11	CARBON	10K	5%	1/4W	
R204	1-249-417-11	CARBON	1K	5%	1/4W	
R205	1-249-417-11	CARBON	1K	5%	1/4W	
R208	1-249-403-11	CARBON	68	5%	1/4W	
R209	1-249-435-11	CARBON	33K	5%	1/4W	
R210	1-249-429-11	CARBON	10K	5%	1/4W	
R222	1-249-435-11	CARBON	33K	5%	1/4W	
R223	1-249-429-11	CARBON	10K	5%	1/4W	
R224	1-249-436-11	CARBON	39K	5%	1/4W	
R225	1-247-840-00	CARBON	2.4K	5%	1/4W	
R226	1-249-433-11	CARBON	22K	5%	1/4W	
R237	1-249-433-11	CARBON	22K	5%	1/4W	
R238	1-249-441-11	CARBON	100K	5%	1/4W	
R239	1-247-893-11	CARBON	390K	5%	1/4W	
R281	1-249-417-11	CARBON	1K	5%	1/4W	
R282	1-249-417-11	CARBON	1K	5%	1/4W	
R283	1-249-385-11	CARBON	2.2	5%	1/6W	
R284	1-249-385-11	CARBON	2.2	5%	1/6W	
R286	1-249-429-11	CARBON	10K	5%	1/4W	
R287	1-249-417-11	CARBON	1K	5%	1/4W	
R301	1-249-421-11	CARBON	2.2K	5%	1/4W	
R302	1-247-903-00	CARBON	1M	5%	1/4W	
R303	1-249-422-11	CARBON	2.7K	5%	1/4W	
R304	1-249-409-11	CARBON	220	5%	1/4W	
R305	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-405-11	CARBON	100	5%	1/4W	
R308	1-249-417-11	CARBON	1K	5%	1/4W	
R309	1-249-434-11	CARBON	27K	5%	1/4W	
R310	1-249-435-11	CARBON	33K	5%	1/4W	
R313	1-249-429-11	CARBON	10K	5%	1/4W	
R314	1-249-425-11	CARBON	4.7K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R315	1-249-417-11	CARBON	1K	5%	1/4W	
R316	1-249-405-11	CARBON	100	5%	1/4W	
R317	1-249-437-11	CARBON	47K	5%	1/4W	
R318	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-249-411-11	CARBON	330	5%	1/4W	
R321	1-249-417-11	CARBON	1K	5%	1/4W	
R322	1-249-417-11	CARBON	1K	5%	1/4W	
R323	1-249-417-11	CARBON	1K	5%	1/4W	
R324	1-249-417-11	CARBON	1K	5%	1/4W	
R326	1-249-433-11	CARBON	22K	5%	1/4W	
R328	1-249-429-11	CARBON	10K	5%	1/4W	
R329	1-249-417-11	CARBON	1K	5%	1/4W	
R330	1-247-870-11	CARBON	43K	5%	1/4W	
R331	1-249-437-11	CARBON	47K	5%	1/4W	
R332	1-249-433-11	CARBON	22K	5%	1/4W	
R334	1-249-405-11	CARBON	100	5%	1/4W	
R340	1-247-836-11	CARBON	1.6K	5%	1/4W	
R341	1-249-422-11	CARBON	2.7K	5%	1/4W	
R342	1-249-421-11	CARBON	2.2K	5%	1/4W	
R344	1-249-421-11	CARBON	2.2K	5%	1/4W	
R345	1-249-433-11	CARBON	22K	5%	1/4W	
R346	1-249-433-11	CARBON	22K	5%	1/4W	
R347	1-249-421-11	CARBON	2.2K	5%	1/4W	
R348	1-249-405-11	CARBON	100	5%	1/4W	
R349	1-249-405-11	CARBON	100	5%	1/4W	
R350	1-247-899-11	CARBON	680K	5%	1/4W	
R351	1-247-899-11	CARBON	680K	5%	1/4W	
R360	1-249-405-11	CARBON	100	5%	1/4W	
R361	1-249-435-11	CARBON	33K	5%	1/4W	
R362	1-249-381-11	CARBON	1	5%	1/4W	
R363	1-247-792-11	CARBON	24	5%	1/4W	
R364	1-215-386-00	METAL	36	1%	1/6W	
R365	1-249-437-11	CARBON	47K	5%	1/4W	
R366	1-249-421-11	CARBON	2.2K	5%	1/4W	
R369	1-249-381-11	CARBON	1	5%	1/4W	
R912	1-249-436-11	CARBON	39K	5%	1/4W	
R913	1-249-429-11	CARBON	10K	5%	1/4W	
R919	1-249-429-11	CARBON	10K	5%	1/4W	
R920	1-249-415-11	CARBON	680	5%	1/4W	
⚠R921	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R922	1-249-409-11	CARBON	220	5%	1/4W	
R923	1-249-417-11	CARBON	1K	5%	1/4W	
⚠R924	1-212-934-00	FUSIBLE	1	5%	1/2W	F
R925	1-249-415-11	CARBON	680	5%	1/4W	
R926	1-249-429-11	CARBON	10K	5%	1/4W	
R927	1-249-429-11	CARBON	10K	5%	1/4W	
R930	1-249-429-11	CARBON	10K	5%	1/4W	
R931	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R932	1-217-637-00	FUSIBLE	1	5%	1/4W	F

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

AUDIO | BATTERY TERMINAL (A) | BATTERY TERMINAL (B) | CD

Ref. No.	Part No.	Description				Remark
R933	1-249-418-11	CARBON	1.2K	5%	1/4W	
⚠R935	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R936	1-249-411-11	CARBON	330	5%	1/4W	
⚠R938	1-212-934-00	FUSIBLE	1	5%	1/2W	F
R939	1-249-413-11	CARBON	470	5%	1/4W	
⚠R942	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R950	1-249-429-11	CARBON	10K	5%	1/4W	
R951	1-249-423-11	CARBON	3.3K	5%	1/4W	
R952	1-249-427-11	CARBON	6.8K	5%	1/4W	
R953	1-249-427-11	CARBON	6.8K	5%	1/4W	
R956	1-249-429-11	CARBON	10K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV101	1-230-496-11	RES, ADJ, CARBON 10K				
RV102	1-230-496-11	RES, ADJ, CARBON 10K				
RV103	1-230-496-11	RES, ADJ, CARBON 10K				
RV104	1-237-288-11	RES, ADJ, CARBON 47K				
RV201	1-230-496-11	RES, ADJ, CARBON 10K				
RV202	1-230-496-11	RES, ADJ, CARBON 10K				
RV203	1-230-496-11	RES, ADJ, CARBON 10K				
RV204	1-237-288-11	RES, ADJ, CARBON 47K				
		< SWITCH >				
S301	1-571-552-11	SWITCH, SLIDE (ISS)				
S302	1-571-329-11	SWITCH, SLIDE (AM TUNING INTERVAL)				
		< TRANSFORMER >				
T301	1-433-391-11	TRANSFORMER, BIAS OSCILLATOR				
**********						
*	1-641-168-11	BATTERY TERMINAL (A) BOARD				
		**********				
	3-372-394-01	SPRING (-), BATTERY COIL				
	3-372-396-01	SPRING (R6 -), COIL				
		< CONNECTOR >				
* CN904	1-564-518-11	PLUG, CONNECTOR 3P				
**********						
*	1-641-169-11	BATTERY TERMINAL (B) BOARD				
		**********				
**********						
*	A-3275-373-A	CD BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C701	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	

Ref. No.	Part No.	Description				Remark
C702	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	
C703	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V	
C704	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C705	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C706	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C707	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C708	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C709	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C710	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C711	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C713	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C714	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C715	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C717	1-131-368-00	TANTALUM	3.3uF	10%	16V	
C718	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	
C720	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C721	1-126-157-11	ELECT	10uF	20%	16V	
C722	1-163-833-00	CERAMIC CHIP	0.068uF		25V	
C723	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C725	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C726	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C727	1-126-154-11	ELECT	47uF	20%	6.3V	
C728	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C729	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C730	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C731	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C732	1-163-234-11	CERAMIC CHIP	20PF	5%	50V	
C733	1-163-234-11	CERAMIC CHIP	20PF	5%	50V	
C734	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C735	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	
C737	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C738	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C743	1-124-472-11	ELECT	470uF	20%	10V	
C750	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V	
C751	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C753	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C754	1-124-473-11	ELECT	1000uF	20%	10V	
C755	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C760	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C761	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C762	1-164-222-11	CERAMIC CHIP	0.22uF		25V	
C763	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C764	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C765	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C766	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C767	1-126-924-11	ELECT	330uF	20%	10V	
C768	1-124-589-11	ELECT	47uF	20%	16V	
C769	1-124-589-11	ELECT	47uF	20%	16V	
C771	1-126-603-11	ELECT CHIP	4.7uF	20%	35V	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
C772	1-164-693-11	CERAMIC CHIP	0.0018uF	5%	50V
C773	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C774	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C775	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C776	1-126-163-11	ELECT	4.7uF	20%	50V
C777	1-126-924-11	ELECT	330uF	20%	10V
C781	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C782	1-164-693-11	CERAMIC CHIP	0.0018uF	5%	50V
C783	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C784	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C785	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C786	1-126-163-11	ELECT	4.7uF	20%	50V
C787	1-164-346-11	CERAMIC CHIP	1uF		16V
C794	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C795	1-126-207-11	ELECT CHIP	33uF	20%	4V
C796	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C797	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C798	1-162-294-31	CERAMIC	0.001uF	10%	50V

< CONNECTOR >

* CN701	1-691-017-11	HOUSING, CONNECTOR 12P	
* CN702	1-691-090-11	HOUSING, CONNECTOR 26P	
* CN704	1-691-010-11	HOUSING, CONNECTOR 5P	

< DIODE >

D701	8-719-400-18	DIODE	MA152WK
D702	8-719-400-18	DIODE	MA152WK
D703	8-719-800-76	DIODE	1SS226

< IC >

IC701	8-752-053-73	IC	CXA1372AQ
IC702	8-752-337-26	IC	CXD2500AQ
IC703	8-759-518-59	IC	BA6296FP
IC704	8-759-503-98	IC	SM5840DS
IC705	8-759-521-21	IC	2J6700U
IC706	8-759-981-XX	IC	RC4560M
IC707	8-759-981-XX	IC	RC4560M
IC710	8-759-962-08	IC	BA6208

< JUMPER RESISTOR >

JR701	1-216-295-00	METAL CHIP	0	5%	1/10W
JR702	1-216-295-00	METAL CHIP	0	5%	1/10W
JR703	1-216-295-00	METAL CHIP	0	5%	1/10W
JR704	1-216-295-00	METAL CHIP	0	5%	1/10W
JR705	1-216-295-00	METAL CHIP	0	5%	1/10W
JR708	1-216-295-00	METAL CHIP	0	5%	1/10W
JR709	1-216-295-00	METAL CHIP	0	5%	1/10W
JR710	1-216-295-00	METAL CHIP	0	5%	1/10W
JR711	1-216-295-00	METAL CHIP	0	5%	1/10W
JR712	1-216-295-00	METAL CHIP	0	5%	1/10W
JR713	1-216-295-00	METAL CHIP	0	5%	1/10W
JR714	1-216-295-00	METAL CHIP	0	5%	1/10W
JR715	1-216-295-00	METAL CHIP	0	5%	1/10W
JR750	1-216-295-00	METAL CHIP	0	5%	1/10W
JR751	1-216-295-00	METAL CHIP	0	5%	1/10W
JR753	1-216-295-00	METAL CHIP	0	5%	1/10W
JR754	1-216-295-00	METAL CHIP	0	5%	1/10W
JR755	1-216-295-00	METAL CHIP	0	5%	1/10W
JR756	1-216-295-00	METAL CHIP	0	5%	1/10W
JR757	1-216-295-00	METAL CHIP	0	5%	1/10W
JR758	1-216-295-00	METAL CHIP	0	5%	1/10W
JR760	1-216-295-00	METAL CHIP	0	5%	1/10W
JR761	1-216-295-00	METAL CHIP	0	5%	1/10W
JR762	1-216-295-00	METAL CHIP	0	5%	1/10W
JR763	1-216-295-00	METAL CHIP	0	5%	1/10W
JR764	1-216-295-00	METAL CHIP	0	5%	1/10W

< COIL >

L702	1-410-979-11	INDUCTOR	220uH
L704	1-412-852-11	INDUCTOR	47uH

< MOTOR >

M701	X-2625-132-1	MOTOR GEAR ASSY (MB) (SLED)
M702	X-2625-133-2	MOTOR ASSY, SPINDLE (TT CHASSIS ASSY (MB))

< TRANSISTOR >

Q701	8-729-902-XX	TRANSISTOR	DTC114TK
Q703	8-729-902-XX	TRANSISTOR	DTC114TK
Q704	8-729-901-46	TRANSISTOR	DTA114YK
Q705	8-729-920-31	TRANSISTOR	DTC343TK
Q706	8-729-920-31	TRANSISTOR	DTC343TK
Q708	8-729-140-97	TRANSISTOR	2SB734-34
Q709	8-729-900-52	TRANSISTOR	DTC114YK
Q710	8-729-801-84	TRANSISTOR	2SB1013-4
Q711	8-729-900-52	TRANSISTOR	DTC114YK

< RESISTOR >

R701	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R702	1-216-101-00	METAL CHIP	150K	5%	1/10W
R703	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R704	1-216-105-00	METAL CHIP	220K	5%	1/10W
R705	1-216-049-00	METAL CHIP	1K	5%	1/10W
R706	1-216-097-00	METAL CHIP	100K	5%	1/10W
R707	1-216-091-00	METAL CHIP	56K	5%	1/10W
R708	1-216-097-00	METAL CHIP	100K	5%	1/10W
R709	1-216-089-00	METAL CHIP	47K	5%	1/10W
R710	1-216-072-00	METAL CHIP	9.1K	5%	1/10W

CD CD MOTOR CONTROL

Ref. No.	Part No.	Description			Remark
R711	1-216-097-00	METAL CHIP	100K	5%	1/10W
R712	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R713	1-216-101-00	METAL CHIP	150K	5%	1/10W
R714	1-216-073-00	METAL CHIP	10K	5%	1/10W
R731	1-216-081-00	METAL CHIP	22K	5%	1/10W
R732	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R735	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R736	1-216-099-00	METAL CHIP	120K	5%	1/10W
R737	1-216-097-00	METAL CHIP	100K	5%	1/10W
R738	1-216-074-00	METAL CHIP	11K	5%	1/10W
R739	1-216-073-00	METAL CHIP	10K	5%	1/10W
R740	1-216-081-00	METAL CHIP	22K	5%	1/10W
R744	1-216-005-00	METAL CHIP	15	5%	1/10W
R750	1-216-073-00	METAL CHIP	10K	5%	1/10W
R751	1-216-073-00	METAL CHIP	10K	5%	1/10W
R753	1-216-085-00	METAL CHIP	33K	5%	1/10W
R754	1-216-085-00	METAL CHIP	33K	5%	1/10W
R755	1-216-081-00	METAL CHIP	22K	5%	1/10W
R756	1-216-089-00	METAL CHIP	47K	5%	1/10W
R757	1-216-049-00	METAL CHIP	1K	5%	1/10W
R758	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R760	1-216-049-00	METAL CHIP	1K	5%	1/10W
R761	1-216-049-00	METAL CHIP	1K	5%	1/10W
R762	1-216-049-00	METAL CHIP	1K	5%	1/10W
R763	1-216-073-00	METAL CHIP	10K	5%	1/10W
R764	1-216-049-00	METAL CHIP	1K	5%	1/10W
R765	1-216-049-00	METAL CHIP	1K	5%	1/10W
R766	1-216-049-00	METAL CHIP	1K	5%	1/10W
R767	1-216-049-00	METAL CHIP	1K	5%	1/10W
R768	1-216-077-00	METAL CHIP	15K	5%	1/10W
R769	1-216-078-00	METAL GLAZE	16K	5%	1/10W
R770	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R772	1-216-049-00	METAL CHIP	1K	5%	1/10W
R773	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R774	1-216-081-00	METAL CHIP	22K	5%	1/10W
R775	1-216-089-00	METAL CHIP	47K	5%	1/10W
R776	1-216-076-00	METAL CHIP	13K	5%	1/10W
R777	1-216-113-00	METAL CHIP	470K	5%	1/10W
R778	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R779	1-216-073-00	METAL CHIP	10K	5%	1/10W
R780	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R782	1-216-049-00	METAL CHIP	1K	5%	1/10W
R783	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R784	1-216-081-00	METAL CHIP	22K	5%	1/10W
R785	1-216-089-00	METAL CHIP	47K	5%	1/10W
R786	1-216-076-00	METAL CHIP	13K	5%	1/10W
R787	1-216-113-00	METAL CHIP	470K	5%	1/10W
R788	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R789	1-216-073-00	METAL CHIP	10K	5%	1/10W
R790	1-216-073-00	METAL CHIP	10K	5%	1/10W
R791	1-216-049-00	METAL CHIP	1K	5%	1/10W

< VARIABLE RESISTOR >

RV701	1-230-723-11	RES, ADJ, CARBON 47K			
RV702	1-230-722-11	RES, ADJ, CARBON 22K			

< SWITCH >

S701	1-571-936-11	SWITCH, LEAF (LIMIT)			

< VIBRATOR >

XF701	1-567-908-11	VIBRATOR, CRYSTAL 16.934MHz			

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*	1-641-171-11	CD MOTOR BOARD			

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< CONNECTOR >

* CN703	1-691-010-11	HOUSING, CONNECTOR 5P			

< COIL >

L705	1-412-852-11	INDUCTOR	47uH		
L706	1-412-852-11	INDUCTOR	47uH		

< MOTOR >

M703	X-3364-850-1	SUB ASSY, MOTOR (LOADING)			

< SWITCH >

S702	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S703	1-572-086-11	SWITCH, LEAF (LOAD IN)			

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*	A-3275-365-A	CONTROL BOARD, COMPLETE			

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< CAPACITOR >

C140	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C141	1-124-927-11	ELECT	4.7uF	20%	100V
C142	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C143	1-126-233-11	ELECT	22uF	20%	50V
C144	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C145	1-124-927-11	ELECT	4.7uF	20%	100V
C150	1-124-927-11	ELECT	4.7uF	20%	100V
C151	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C152	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C153	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C154	1-126-233-11	ELECT	22uF	20%	50V

Ref. No.	Part No.	Description			Remark
C155	1-136-165-00	FILM	0.1uF	5%	50V
C156	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C157	1-124-927-11	ELECT	4.7uF	20%	100V
C240	1-164-699-11	CERAMIC CHIP	0.0033uF	5%	50V
C241	1-124-927-11	ELECT	4.7uF	20%	100V
C242	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C243	1-126-233-11	ELECT	22uF	20%	50V
C244	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C245	1-124-927-11	ELECT	4.7uF	20%	100V
C250	1-124-927-11	ELECT	4.7uF	20%	100V
C251	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C252	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C253	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C254	1-126-233-11	ELECT	22uF	20%	50V
C255	1-136-165-00	FILM	0.1uF	5%	50V
C256	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C257	1-124-927-11	ELECT	4.7uF	20%	100V
C351	1-124-126-00	ELECT	47uF	20%	10V
C401	1-124-126-00	ELECT	47uF	20%	10V
C402	1-124-907-11	ELECT	10uF	20%	50V
C403	1-124-443-00	ELECT	100uF	20%	10V
C404	1-124-443-00	ELECT	100uF	20%	10V
C601	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C602	1-124-126-00	ELECT	47uF	20%	10V
C603	1-136-176-00	FILM	0.82uF	5%	50V
C604	1-164-346-11	CERAMIC CHIP	1uF		16V
C605	1-164-346-11	CERAMIC CHIP	1uF		16V
C606	1-124-927-11	ELECT	4.7uF	20%	100V
C607	1-124-927-11	ELECT	4.7uF	20%	100V
C608	1-124-902-00	ELECT	0.47uF	20%	50V
C609	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C610	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C612	1-124-126-00	ELECT	47uF	20%	10V
C613	1-136-176-00	FILM	0.82uF	5%	50V
C614	1-164-346-11	CERAMIC CHIP	1uF		16V
C615	1-164-346-11	CERAMIC CHIP	1uF		16V
C616	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C617	1-124-927-11	ELECT	4.7uF	20%	100V
C618	1-124-927-11	ELECT	4.7uF	20%	100V
C619	1-124-902-00	ELECT	0.47uF	20%	50V
C620	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C621	1-124-927-11	ELECT	4.7uF	20%	100V
C622	1-124-925-11	ELECT	2.2uF	20%	100V
C801	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C802	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C803	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C804	1-124-442-00	ELECT	330uF	20%	6.3V
C805	1-124-126-00	ELECT	47uF	20%	10V
C808	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C809	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C810	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C811	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C812	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C813	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C814	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C816	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C817	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C819	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C820	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C821	1-124-443-00	ELECT	100uF	20%	10V
C823	1-126-233-11	ELECT	22uF	20%	50V
C824	1-126-154-11	ELECT	47uF	20%	6.3V
C825	1-126-154-11	ELECT	47uF	20%	6.3V
C826	1-124-589-11	ELECT	47uF	20%	16V
C827	1-124-589-11	ELECT	47uF	20%	16V
C829	1-124-903-11	ELECT	1uF	20%	50V
C830	1-124-907-11	ELECT	10uF	20%	50V
C831	1-124-927-11	ELECT	4.7uF	20%	100V
C832	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C833	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C834	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C835	1-124-126-00	ELECT	47uF	20%	10V
C836	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C837	1-124-443-00	ELECT	100uF	20%	10V
C840	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C842	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C843	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C845	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C846	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C847	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C848	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C849	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C850	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C851	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C852	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C853	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C854	1-124-126-00	ELECT	47uF	20%	10V
C855	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C856	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C857	1-124-126-00	ELECT	47uF	20%	10V
C858	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C859	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C860	1-124-126-00	ELECT	47uF	20%	10V
C861	1-124-477-11	ELECT	47uF	20%	25V
C862	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C863	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C864	1-163-038-00	CERAMIC CHIP	0.1uF		25V

CONTROL

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN601	1-569-930-11	SOCKET, CONNECTOR 13P	
* CN602	1-569-933-11	SOCKET, CONNECTOR 16P	
* CN802	1-580-369-11	PIN, CONNECTOR (PC BOARD) 12P	
* CN804	1-580-369-11	PIN, CONNECTOR (PC BOARD) 12P	
* CN806	1-580-369-11	PIN, CONNECTOR (PC BOARD) 12P	
CN807	1-563-616-11	CONNECTOR, FLEXIBLE 13P	
* CN808	1-691-090-11	HOUSING, CONNECTOR 26P	
* CN809	1-691-083-11	HOUSING, CONNECTOR 24P	
* CN810	1-691-083-11	HOUSING, CONNECTOR 24P	
		< DIODE >	
D601	8-719-800-76	DIODE 1SS226	
D602	8-719-106-09	DIODE RD6.2M-B3	
D603	8-719-159-85	DIODE RD2.0M-B	
D604	8-719-400-18	DIODE MA152WK	
D606	8-719-800-76	DIODE 1SS226	
D607	8-719-106-09	DIODE RD6.2M-B3	
D608	8-719-159-85	DIODE RD2.0M-B	
D611	8-719-105-28	DIODE RD2.4M-B	
D612	8-719-400-18	DIODE MA152WK	
D613	8-719-105-28	DIODE RD2.4M-B	
D614	8-719-400-18	DIODE MA152WK	
D615	8-719-400-18	DIODE MA152WK	
D801	8-719-400-18	DIODE MA152WK	
D802	8-719-400-18	DIODE MA152WK	
D803	8-719-400-18	DIODE MA152WK	
D804	8-719-400-18	DIODE MA152WK	
D805	8-719-400-18	DIODE MA152WK	
D806	8-719-400-18	DIODE MA152WK	
D807	8-719-400-18	DIODE MA152WK	
D810	8-719-400-18	DIODE MA152WK	
		< IC >	
IC340	8-759-008-67	IC MC14066BF	
IC341	8-759-636-55	IC M5218AFP	
IC342	8-759-636-55	IC M5218AFP	
IC601	8-759-822-09	IC LB1641	
IC602	8-759-822-09	IC LB1641	
IC603	8-759-905-47	IC BA338	
IC801	8-752-834-74	IC CXP80724-018Q	
IC802	8-759-520-96	IC PST572I	
IC803	8-759-925-76	IC SN74HC08ANS	
IC805	8-759-518-92	IC RE5VA42CA	
IC806	8-759-912-55	IC S-81250HG	
IC808	8-759-008-67	IC MC14066BF	

Ref. No.	Part No.	Description			Remark
		< JUMPER RESISTOR >			
JW402	1-216-296-00	METAL CHIP	0	5%	1/8W
JW404	1-216-296-00	METAL CHIP	0	5%	1/8W
JW405	1-216-296-00	METAL CHIP	0	5%	1/8W
JW406	1-216-295-00	METAL CHIP	0	5%	1/10W
JW601	1-216-296-00	METAL CHIP	0	5%	1/8W
JW602	1-216-296-00	METAL CHIP	0	5%	1/8W
JW603	1-216-296-00	METAL CHIP	0	5%	1/8W
JW605	1-216-296-00	METAL CHIP	0	5%	1/8W
JW606	1-216-295-00	METAL CHIP	0	5%	1/10W
JW607	1-216-296-00	METAL CHIP	0	5%	1/8W
JW608	1-216-295-00	METAL CHIP	0	5%	1/10W
JW609	1-216-295-00	METAL CHIP	0	5%	1/10W
JW610	1-216-296-00	METAL CHIP	0	5%	1/8W
JW611	1-216-296-00	METAL CHIP	0	5%	1/8W
JW801	1-216-296-00	METAL CHIP	0	5%	1/8W
JW802	1-216-296-00	METAL CHIP	0	5%	1/8W
JW803	1-216-296-00	METAL CHIP	0	5%	1/8W
JW804	1-216-296-00	METAL CHIP	0	5%	1/8W
JW805	1-216-296-00	METAL CHIP	0	5%	1/8W
JW806	1-216-296-00	METAL CHIP	0	5%	1/8W
JW807	1-216-296-00	METAL CHIP	0	5%	1/8W
JW808	1-216-296-00	METAL CHIP	0	5%	1/8W
JW809	1-216-296-00	METAL CHIP	0	5%	1/8W
JW810	1-216-296-00	METAL CHIP	0	5%	1/8W
JW814	1-216-295-00	METAL CHIP	0	5%	1/10W
JW817	1-216-295-00	METAL CHIP	0	5%	1/10W
JW818	1-216-295-00	METAL CHIP	0	5%	1/10W
JW820	1-216-296-00	METAL CHIP	0	5%	1/8W
JW821	1-216-295-00	METAL CHIP	0	5%	1/10W
JW899	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L601	1-408-080-00	INDUCTOR	100uH		
L602	1-408-080-00	INDUCTOR	100uH		
L603	1-408-080-00	INDUCTOR	100uH		
L604	1-408-080-00	INDUCTOR	100uH		
L801	1-424-102-11	COIL, LINE FILTER			
L802	1-410-971-11	INDUCTOR	10uH		
L803	1-410-381-11	INDUCTOR CHIP	10uH		
L804	1-410-381-11	INDUCTOR CHIP	10uH		
L805	1-410-381-11	INDUCTOR CHIP	10uH		
L806	1-410-381-11	INDUCTOR CHIP	10uH		
L807	1-410-381-11	INDUCTOR CHIP	10uH		
L808	1-410-381-11	INDUCTOR CHIP	10uH		
L809	1-410-971-11	INDUCTOR	10uH		
L810	1-410-381-11	INDUCTOR CHIP	10uH		
L811	1-410-971-11	INDUCTOR	10uH		

Ref. No.	Part No.	Description		Remark
L812	1-410-971-11	INDUCTOR	10uH	
L813	1-410-971-11	INDUCTOR	10uH	
L815	1-410-971-11	INDUCTOR	10uH	
L817	1-410-971-11	INDUCTOR	10uH	
L818	1-410-971-11	INDUCTOR	10uH	
L819	1-410-971-11	INDUCTOR	10uH	
L820	1-410-971-11	INDUCTOR	10uH	
L821	1-410-971-11	INDUCTOR	10uH	
L822	1-410-971-11	INDUCTOR	10uH	
L823	1-410-971-11	INDUCTOR	10uH	
L824	1-410-971-11	INDUCTOR	10uH	
L825	1-410-971-11	INDUCTOR	10uH	
L826	1-410-971-11	INDUCTOR	10uH	
L827	1-410-971-11	INDUCTOR	10uH	
L828	1-410-971-11	INDUCTOR	10uH	
L829	1-410-971-11	INDUCTOR	10uH	
L830	1-410-971-11	INDUCTOR	10uH	
L831	1-410-381-11	INDUCTOR CHIP	10uH	
L833	1-410-381-11	INDUCTOR CHIP	10uH	
L834	1-410-381-11	INDUCTOR CHIP	10uH	
L836	1-410-971-11	INDUCTOR	10uH	
		< FILTER >		
LF140	1-239-174-11	FILTER, LOW PASS		
LF240	1-239-174-11	FILTER, LOW PASS		
		< TRANSISTOR >		
Q140	8-729-900-52	TRANSISTOR	DTC114YK	
Q141	8-729-900-52	TRANSISTOR	DTC114YK	
Q142	8-729-900-52	TRANSISTOR	DTC114YK	
Q143	8-729-900-52	TRANSISTOR	DTC114YK	
Q144	8-729-900-52	TRANSISTOR	DTC114YK	
Q145	8-729-900-52	TRANSISTOR	DTC114YK	
Q240	8-729-900-52	TRANSISTOR	DTC114YK	
Q241	8-729-900-52	TRANSISTOR	DTC114YK	
Q242	8-729-900-52	TRANSISTOR	DTC114YK	
Q243	8-729-900-52	TRANSISTOR	DTC114YK	
Q244	8-729-900-52	TRANSISTOR	DTC114YK	
Q245	8-729-900-52	TRANSISTOR	DTC114YK	
Q340	8-729-900-52	TRANSISTOR	DTC114YK	
Q601	8-729-115-30	TRANSISTOR	2SK105A-30	
Q602	8-729-900-52	TRANSISTOR	DTC114YK	
Q603	8-729-140-97	TRANSISTOR	2SB734-34	
Q604	8-729-902-XX	TRANSISTOR	DTC114TK	
Q605	8-729-142-46	TRANSISTOR	2SC2001-LK	
Q606	8-729-900-52	TRANSISTOR	DTC114YK	
Q607	8-729-900-52	TRANSISTOR	DTC114YK	
Q608	8-729-900-52	TRANSISTOR	DTC114YK	

Ref. No.	Part No.	Description		Remark
Q609	8-729-115-30	TRANSISTOR	2SK105A-30	
Q610	8-729-900-52	TRANSISTOR	DTC114YK	
Q611	8-729-140-97	TRANSISTOR	2SB734-34	
Q612	8-729-902-XX	TRANSISTOR	DTC114TK	
Q613	8-729-142-46	TRANSISTOR	2SC2001-LK	
Q614	8-729-900-52	TRANSISTOR	DTC114YK	
Q615	8-729-900-52	TRANSISTOR	DTC114YK	
Q616	8-729-900-52	TRANSISTOR	DTC114YK	
Q617	8-729-902-XX	TRANSISTOR	DTC114TK	
Q618	8-729-902-XX	TRANSISTOR	DTC114TK	
Q619	8-729-801-84	TRANSISTOR	2SB1013-4	
Q620	8-729-801-84	TRANSISTOR	2SB1013-4	
Q801	8-729-901-46	TRANSISTOR	DTA114YK	
Q802	8-729-901-46	TRANSISTOR	DTA114YK	
Q803	8-729-901-46	TRANSISTOR	DTA114YK	
Q804	8-729-901-46	TRANSISTOR	DTA114YK	
Q805	8-729-901-46	TRANSISTOR	DTA114YK	
Q806	8-729-901-46	TRANSISTOR	DTA114YK	
Q807	8-729-901-46	TRANSISTOR	DTA114YK	
Q808	8-729-923-73	TRANSISTOR	DTA123YK	
Q809	8-729-900-52	TRANSISTOR	DTC114YK	
Q811	8-729-142-46	TRANSISTOR	2SC2001-LK	
Q812	8-729-901-46	TRANSISTOR	DTA114YK	
Q813	8-729-901-46	TRANSISTOR	DTA114YK	
Q814	8-729-901-46	TRANSISTOR	DTA114YK	
Q815	8-729-901-46	TRANSISTOR	DTA114YK	
Q816	8-729-900-52	TRANSISTOR	DTC114YK	
Q820	8-729-900-52	TRANSISTOR	DTC114YK	
Q822	8-729-901-46	TRANSISTOR	DTA114YK	
Q823	8-729-900-52	TRANSISTOR	DTC114YK	
Q830	8-729-900-51	TRANSISTOR	DTA114TK	
Q831	8-729-900-52	TRANSISTOR	DTC114YK	
		< RESISTOR >		
R140	1-216-061-00	METAL CHIP	3.3K 5%	1/10W
R141	1-216-076-00	METAL CHIP	13K 5%	1/10W
R142	1-216-073-00	METAL CHIP	10K 5%	1/10W
R143	1-216-090-00	METAL CHIP	51K 5%	1/10W
R144	1-216-077-00	METAL CHIP	15K 5%	1/10W
R145	1-216-081-00	METAL CHIP	22K 5%	1/10W
R146	1-216-081-00	METAL CHIP	22K 5%	1/10W
R148	1-216-073-00	METAL CHIP	10K 5%	1/10W
R150	1-216-081-00	METAL CHIP	22K 5%	1/10W
R151	1-216-081-00	METAL CHIP	22K 5%	1/10W
R152	1-216-121-00	METAL CHIP	1M 5%	1/10W
R153	1-216-121-00	METAL CHIP	1M 5%	1/10W
R154	1-216-121-00	METAL CHIP	1M 5%	1/10W
R155	1-216-081-00	METAL CHIP	22K 5%	1/10W
R156	1-216-077-00	METAL CHIP	15K 5%	1/10W

CONTROL

Ref. No.	Part No.	Description			Remark
R157	1-216-081-00	METAL CHIP	22K	5%	1/10W
R158	1-216-075-00	METAL CHIP	12K	5%	1/10W
R159	1-216-121-00	METAL CHIP	1M	5%	1/10W
R160	1-216-121-00	METAL CHIP	1M	5%	1/10W
R161	1-216-089-00	METAL CHIP	47K	5%	1/10W
R162	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R163	1-216-081-00	METAL CHIP	22K	5%	1/10W
R240	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R241	1-216-076-00	METAL CHIP	13K	5%	1/10W
R242	1-216-073-00	METAL CHIP	10K	5%	1/10W
R243	1-216-090-00	METAL CHIP	51K	5%	1/10W
R244	1-216-077-00	METAL CHIP	15K	5%	1/10W
R245	1-216-081-00	METAL CHIP	22K	5%	1/10W
R246	1-216-081-00	METAL CHIP	22K	5%	1/10W
R248	1-216-073-00	METAL CHIP	10K	5%	1/10W
R250	1-216-081-00	METAL CHIP	22K	5%	1/10W
R251	1-216-081-00	METAL CHIP	22K	5%	1/10W
R252	1-216-121-00	METAL CHIP	1M	5%	1/10W
R253	1-216-121-00	METAL CHIP	1M	5%	1/10W
R254	1-216-121-00	METAL CHIP	1M	5%	1/10W
R255	1-216-081-00	METAL CHIP	22K	5%	1/10W
R256	1-216-077-00	METAL CHIP	15K	5%	1/10W
R257	1-216-081-00	METAL CHIP	22K	5%	1/10W
R258	1-216-075-00	METAL CHIP	12K	5%	1/10W
R259	1-216-121-00	METAL CHIP	1M	5%	1/10W
R260	1-216-121-00	METAL CHIP	1M	5%	1/10W
R261	1-216-089-00	METAL CHIP	47K	5%	1/10W
R262	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R263	1-216-081-00	METAL CHIP	22K	5%	1/10W
R351	1-216-025-00	METAL CHIP	100	5%	1/10W
R401	1-216-025-00	METAL CHIP	100	5%	1/10W
R402	1-216-097-00	METAL CHIP	100K	5%	1/10W
R403	1-216-097-00	METAL CHIP	100K	5%	1/10W
R404	1-216-073-00	METAL CHIP	10K	5%	1/10W
R405	1-216-073-00	METAL CHIP	10K	5%	1/10W
R407	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R410	1-216-089-00	METAL CHIP	47K	5%	1/10W
R411	1-216-113-00	METAL CHIP	470K	5%	1/10W
R412	1-216-113-00	METAL CHIP	470K	5%	1/10W
R413	1-216-025-00	METAL CHIP	100	5%	1/10W
R501	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R502	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R503	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R504	1-216-073-00	METAL CHIP	10K	5%	1/10W
R505	1-216-073-00	METAL CHIP	10K	5%	1/10W
R506	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W
R510	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R511	1-216-073-00	METAL CHIP	10K	5%	1/10W
R512	1-216-073-00	METAL CHIP	10K	5%	1/10W
R513	1-216-073-00	METAL CHIP	10K	5%	1/10W
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W
R515	1-216-073-00	METAL CHIP	10K	5%	1/10W
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-073-00	METAL CHIP	10K	5%	1/10W
R520	1-216-049-00	METAL CHIP	1K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W
R523	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R525	1-216-073-00	METAL CHIP	10K	5%	1/10W
R526	1-216-073-00	METAL CHIP	10K	5%	1/10W
R527	1-216-073-00	METAL CHIP	10K	5%	1/10W
R528	1-216-073-00	METAL CHIP	10K	5%	1/10W
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W
R530	1-216-073-00	METAL CHIP	10K	5%	1/10W
R531	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-049-00	METAL CHIP	1K	5%	1/10W
R533	1-216-049-00	METAL CHIP	1K	5%	1/10W
R534	1-216-049-00	METAL CHIP	1K	5%	1/10W
R535	1-216-049-00	METAL CHIP	1K	5%	1/10W
R536	1-216-073-00	METAL CHIP	10K	5%	1/10W
R537	1-216-049-00	METAL CHIP	1K	5%	1/10W
R538	1-216-073-00	METAL CHIP	10K	5%	1/10W
R539	1-216-049-00	METAL CHIP	1K	5%	1/10W
R601	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R602	1-216-097-00	METAL CHIP	100K	5%	1/10W
R603	1-216-097-00	METAL CHIP	100K	5%	1/10W
R604	1-216-049-00	METAL CHIP	1K	5%	1/10W
R605	1-216-041-00	METAL CHIP	470	5%	1/10W
R606	1-216-097-00	METAL CHIP	100K	5%	1/10W
R607	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R609	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R610	1-216-043-00	METAL CHIP	560	5%	1/10W
R611	1-216-045-00	METAL CHIP	680	5%	1/10W
R612	1-216-073-00	METAL CHIP	10K	5%	1/10W
R613	1-216-045-00	METAL CHIP	680	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-097-00	METAL CHIP	100K	5%	1/10W
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W
R617	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R618	1-216-097-00	METAL CHIP	100K	5%	1/10W
R619	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W
R621	1-216-041-00	METAL CHIP	470	5%	1/10W
R622	1-216-097-00	METAL CHIP	100K	5%	1/10W
R623	1-216-049-00	METAL CHIP	1K	5%	1/10W
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R625	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R626	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R627	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R628	1-216-043-00	METAL CHIP	560	5%	1/10W
R629	1-216-045-00	METAL CHIP	680	5%	1/10W
R630	1-216-045-00	METAL CHIP	680	5%	1/10W
R631	1-216-097-00	METAL CHIP	100K	5%	1/10W
R632	1-216-097-00	METAL CHIP	100K	5%	1/10W
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W
R634	1-216-097-00	METAL CHIP	100K	5%	1/10W
R635	1-216-097-00	METAL CHIP	100K	5%	1/10W
R636	1-216-097-00	METAL CHIP	100K	5%	1/10W
R637	1-216-097-00	METAL CHIP	100K	5%	1/10W
R638	1-216-073-00	METAL CHIP	10K	5%	1/10W
R639	1-216-105-00	METAL CHIP	220K	5%	1/10W
R640	1-216-097-00	METAL CHIP	100K	5%	1/10W
R641	1-216-073-00	METAL CHIP	10K	5%	1/10W
R642	1-216-049-00	METAL CHIP	1K	5%	1/10W
R643	1-216-041-00	METAL CHIP	470	5%	1/10W
R644	1-216-041-00	METAL CHIP	470	5%	1/10W
R645	1-216-049-00	METAL CHIP	1K	5%	1/10W
R646	1-216-025-00	METAL CHIP	100	5%	1/10W
R647	1-216-017-00	METAL CHIP	47	5%	1/10W
R648	1-216-097-00	METAL CHIP	100K	5%	1/10W
R649	1-216-097-00	METAL CHIP	100K	5%	1/10W
R801	1-216-121-00	METAL CHIP	1M	5%	1/10W
R802	1-216-017-00	METAL CHIP	47	5%	1/10W
R803	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R804	1-216-073-00	METAL CHIP	10K	5%	1/10W
R805	1-216-089-00	METAL CHIP	47K	5%	1/10W
R806	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R807	1-216-049-00	METAL CHIP	1K	5%	1/10W
R808	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R809	1-216-089-00	METAL CHIP	47K	5%	1/10W
R821	1-216-073-00	METAL CHIP	10K	5%	1/10W
R822	1-216-073-00	METAL CHIP	10K	5%	1/10W
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W
R853	1-216-073-00	METAL CHIP	10K	5%	1/10W
R855	1-216-049-00	METAL CHIP	1K	5%	1/10W
R856	1-216-037-00	METAL CHIP	330	5%	1/10W
R857	1-216-107-00	METAL CHIP	270K	5%	1/10W
R858	1-216-049-00	METAL CHIP	1K	5%	1/10W
R859	1-216-049-00	METAL CHIP	1K	5%	1/10W
R860	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R866	1-216-097-00	METAL CHIP	100K	5%	1/10W
R867	1-216-081-00	METAL CHIP	22K	5%	1/10W
R868	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R870	1-216-049-00	METAL CHIP	1K	5%	1/10W
R871	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R873	1-216-049-00	METAL CHIP	1K	5%	1/10W
R874	1-216-049-00	METAL CHIP	1K	5%	1/10W
R875	1-216-049-00	METAL CHIP	1K	5%	1/10W
R876	1-216-049-00	METAL CHIP	1K	5%	1/10W
R899	1-216-073-00	METAL CHIP	10K	5%	1/10W

< VARIABLE RESISTOR >

RV601	1-230-719-11	RES, ADJ, CARBON 2.2K			
RV602	1-230-719-11	RES, ADJ, CARBON 2.2K			
RV603	1-230-719-11	RES, ADJ, CARBON 2.2K			
RV604	1-230-719-11	RES, ADJ, CARBON 2.2K			

< CRYSTAL >

X801	1-567-775-11	VIBRATOR, CERAMIC 4.19MHz			
X802	1-567-098-00	OSCILLATOR, CRYSTAL 32.768kHz			

****

* 1-641-172-11 LAMP BOARD

****

< CONNECTOR >

* CN812 1-564-704-11 PIN, CONNECTOR (SMALL TYPE) 2P

< PILOT LAMP >

PL801	1-518-688-11	LAMP, PILOT			
PL802	1-518-688-11	LAMP, PILOT			
PL803	1-518-688-11	LAMP, PILOT			
PL804	1-518-688-11	LAMP, PILOT			

****

* 1-641-173-11 LCD BOARD

****

7-685-647-79 SCREW, TAPPING +BV 3X10

* 3-372-397-01 ILLUMINATOR (27)

* 3-372-414-01 HOLDER (27), LCD

< CAPACITOR >

C822	1-124-589-11	ELECT	47uF	20%	16V
C850	1-161-379-00	CERAMIC	0.01uF	20%	25V

< CONNECTOR >

CN801	1-580-368-11	HOUSING, CONNECTOR (PC BOARD)	12P		
* CN811	1-564-704-11	PIN, CONNECTOR (SMALL TYPE)	2P		

LCD MD-SW (A) MD-SW (B) POWER

Ref. No.	Part No.	Description			Remark
		< IC >			
IC804	8-759-055-34	IC uPD7225G-00LA			
		< LIQUID CRYSTAL DISPLAY >			
ND801	1-809-522-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< RESISTOR >			
R614	1-247-891-00	CARBON	330K	5% 1/4W	
R861	1-249-441-11	CARBON	100K	5% 1/4W	
R862	1-249-441-11	CARBON	100K	5% 1/4W	
R863	1-249-441-11	CARBON	100K	5% 1/4W	
R864	1-247-885-00	CARBON	180K	5% 1/4W	
R865	1-249-429-11	CARBON	10K	5% 1/4W	
**********					
*	1-641-150-11	MD-SW (A) BOARD			
		**********			
	3-360-345-01	HOLDER (PHOTO)			
	9-911-844-XX	CUSHION (RM)			
		< CAPACITOR >			
C681	1-136-175-00	FILM	0.68uF	5% 50V	
		< CONNECTOR >			
CN681	1-565-937-11	SOCKET, CONNECTOR 13P			
* CN682	1-564-722-31	PIN, CONNECTOR (SMALL TYPE) 6P			
		< DIODE >			
D681	8-719-974-59	DIODE 1SR139-100			
		< PHOTO INTERUPTER >			
PH681	8-719-939-11	PHOTO INTERUPTER GP-2S09-B			
		< SWITCH >			
S681	1-571-263-11	SWITCH (STOP)			
S682	1-572-248-11	SWITCH, LEAF (TYPE II)			
S683	1-572-248-11	SWITCH, LEAF (CASSETE A)			
**********					
*	1-641-151-11	MD-SW (B) BOARD			
		**********			
	3-360-345-01	HOLDER (PHOTO)			
	9-911-844-XX	CUSHION (RM)			
		< CAPACITOR >			
C691	1-136-175-00	FILM	0.68uF	5% 50V	

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN691	1-565-938-11	SOCKET, CONNECTOR 16P			
* CN692	1-564-722-31	PIN, CONNECTOR (SMALL TYPE) 6P			
		< DIODE >			
D691	8-719-974-59	DIODE 1SR139-100			
		< PHOTO INTERUPTER >			
PH691	8-719-939-11	PHOTO INTERUPTER GP-2S09-B			
		< SWITCH >			
S691	1-571-263-11	SWITCH (STOP)			
S692	1-572-248-11	SWITCH, LEAF (REC B)			
S693	1-572-248-11	SWITCH, LEAF (TYPE II)			
S694	1-572-248-11	SWITCH, LEAF (TYPE IV)			
S695	1-572-248-11	SWITCH, LEAF (CASSETE B)			
S696	1-572-248-11	SWITCH, LEAF (REC A)			
**********					
*	1-641-167-11	POWER BOARD			
		**********			
	1-533-233-11	HOLDER, FUSE			
		< CAPACITOR >			
C901	1-124-771-00	ELECT	6800uF	20% 25V	
C903	1-136-165-00	FILM	0.1uF	5% 50V	
C904	1-101-004-00	CERAMIC	0.01uF	50V	
C905	1-101-004-00	CERAMIC	0.01uF	50V	
C906	1-101-004-00	CERAMIC	0.01uF	50V	
C907	1-126-933-11	ELECT	100uF	20% 16V	
C908	1-101-004-00	CERAMIC	0.01uF	50V	
C909	1-101-004-00	CERAMIC	0.01uF	50V	
C968	1-101-005-00	CERAMIC	22000PF	50V	
		< CONNECTOR >			
CN901	1-564-507-11	PLUG, CONNECTOR 4P			
* CN902	1-564-510-11	PLUG, CONNECTOR 7P			
		< DIODE >			
D901	8-719-902-17	DIODE U15G			
D902	8-719-902-17	DIODE U15G			
D903	8-719-902-17	DIODE U15G			
D904	8-719-902-17	DIODE U15G			
D905	8-719-911-19	DIODE 1SS119			
		< FUSE >			
⚠F901	1-576-110-11	FUSE 6.0A 125V			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
⚠F902	1-532-284-00	FUSE, TIME-LAG T630mA 250V			
		< JACK >			
⚠J901	1-526-838-11	INLET, AC 2P (~AC IN)			
		< LINE FILTER >			
⚠LF901	1-424-150-11	TRANSFORMER, LINE FILTER			
		< RESISTOR >			
R901	1-249-420-11	CARBON	1.8K	5% 1/4W	
R902	1-249-409-11	CARBON	220	5% 1/4W	
		< TRANSFORMER >			
⚠T901	1-450-887-11	TRANSFORMER, POWER			
**********					
*	A-3275-368-A	RADIO BOARD, COMPLETE			
		**********			
	1-533-233-11	HOLDER, FUSE			
		< CAPACITOR >			
C1	1-163-089-00	CERAMIC CHIP	6PF		50V
C2	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C3	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C4	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C5	1-163-088-00	CERAMIC CHIP	5PF		50V
C6	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C7	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C8	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C9	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C10	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C11	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C12	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C13	1-124-126-00	ELECT	47uF	20%	10V
C14	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
C15	1-163-833-00	CERAMIC CHIP	0.068uF		25V
C16	1-124-903-11	ELECT	1uF	20%	50V
C17	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
C18	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C19	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C20	1-124-903-11	ELECT	1uF	20%	50V
C21	1-124-907-11	ELECT	10uF	20%	50V
C22	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C23	1-124-907-11	ELECT	10uF	20%	50V
C24	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C25	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C26	1-163-237-11	CERAMIC CHIP	27PF	5%	50V

Ref. No.	Part No.	Description			Remark
C27	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C28	1-161-021-11	CERAMIC	0.047uF	10%	25V
C29	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C30	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C31	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C32	1-162-294-31	CERAMIC	0.001uF	10%	50V
C33	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C34	1-124-927-11	ELECT	4.7uF	20%	100V
C35	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C36	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C37	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C38	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C39	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C40	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C41	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C42	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C43	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C44	1-124-902-00	ELECT	0.47uF	20%	50V
C45	1-124-902-00	ELECT	0.47uF	20%	50V
C46	1-124-907-11	ELECT	10uF	20%	50V
C47	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C48	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C49	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C50	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C51	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C52	1-124-443-00	ELECT	100uF	20%	10V
C53	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C54	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C55	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C56	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C57	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C58	1-136-177-00	FILM	1uF	5%	50V
C59	1-162-596-21	CERAMIC	0.022uF		
C61	1-163-173-00	CERAMIC CHIP	47PF	5%	50V
C68	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C69	1-162-282-31	CERAMIC	100PF	10%	50V
		< FILTER >			
CF1	1-567-198-71	FILTER, CERAMIC			
CF1	1-578-781-21	FILTER, CERAMIC			
CF2	1-567-198-71	FILTER, CERAMIC			
CF2	1-578-781-21	FILTER, CERAMIC			
CF3	1-578-781-21	FILTER, CERAMIC			
CF3	1-578-784-11	DISCRIMINATOR, CERAMIC			
CF4	1-578-779-11	VIBLATOR, CERAMIC			
CFT1	1-239-173-11	ENCAPSULATED COMPONENT			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

RADIO

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN1	1-563-616-11	CONNECTOR, FLEXIBLE 13P	
		< TRIMMER >	
CT1	1-141-411-11	CAP, ADJ 20PF	
CT2	1-141-411-11	CAP, ADJ 20PF	
		< DIODE >	
D1	8-719-400-16	DIODE MA153	
D3	8-719-104-34	DIODE 1S2836	
D5	8-719-980-71	DIODE SVC342L-V	
D6	8-719-106-09	DIODE RD6.2M-B3	
D7	8-713-300-57	DIODE 1T33	
D8	8-713-300-57	DIODE 1T33	
		< FILTER >	
FL1	1-236-022-11	FILTER, BAND PASS	
		< IC >	
IC1	8-759-242-89	IC TA2012N	
IC2	8-759-242-90	IC TC9216P	
IC3	8-759-039-95	IC TA8176SN	
		< JUMPER RESISTOR >	
JR1	1-216-296-00	METAL CHIP 0 5%	1/8W
		< COIL >	
L1	1-406-443-11	COIL (OSC)	
L2	1-402-581-11	ANTENNA, FERRITE-ROD (MW)	
L3	1-426-571-11	COIL (RF)	
L4	1-410-971-11	INDUCTOR 10uH	
L6	1-406-437-11	COIL (OSC)	
L7	1-410-971-11	INDUCTOR 10uH	
L9	1-410-971-11	INDUCTOR 10uH	
		< TRANSISTOR >	
Q1	8-729-920-38	TRANSISTOR 2SC2059K-N	
Q4	8-729-900-51	TRANSISTOR DTA114TK	
Q5	8-729-900-51	TRANSISTOR DTA114TK	
Q6	8-729-900-51	TRANSISTOR DTA114TK	
Q7	8-729-920-31	TRANSISTOR DTC343TK	
Q8	8-729-900-52	TRANSISTOR DTC114YK	
Q9	8-729-920-31	TRANSISTOR DTC343TK	
Q10	8-729-920-31	TRANSISTOR DTC343TK	
Q11	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q16	8-729-923-73	TRANSISTOR DTA123YK	
Q17	8-729-012-83	TRANSISTOR 2SK679A	
Q18	8-729-106-07	TRANSISTOR 2SK514-H	
		< RESISTOR >	
R3	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R4	1-216-089-00	METAL CHIP 47K 5%	1/10W
R5	1-216-077-00	METAL CHIP 15K 5%	1/10W
R6	1-216-013-00	METAL CHIP 33 5%	1/10W
R7	1-216-077-00	METAL CHIP 15K 5%	1/10W
R8	1-216-081-00	METAL CHIP 22K 5%	1/10W
R9	1-216-025-00	METAL CHIP 100 5%	1/10W
R10	1-216-073-00	METAL CHIP 10K 5%	1/10W
R11	1-216-073-00	METAL CHIP 10K 5%	1/10W
R12	1-216-089-00	METAL CHIP 47K 5%	1/10W
R13	1-216-089-00	METAL CHIP 47K 5%	1/10W
R14	1-216-073-00	METAL CHIP 10K 5%	1/10W
R15	1-216-037-00	METAL CHIP 330 5%	1/10W
R16	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R17	1-216-089-00	METAL CHIP 47K 5%	1/10W
R18	1-216-027-00	METAL CHIP 120 5%	1/10W
R19	1-216-037-00	METAL CHIP 330 5%	1/10W
R20	1-216-089-00	METAL CHIP 47K 5%	1/10W
R21	1-216-015-00	METAL CHIP 39 5%	1/10W
R22	1-216-085-00	METAL CHIP 33K 5%	1/10W
R23	1-216-097-00	METAL CHIP 100K 5%	1/10W
R24	1-216-073-00	METAL CHIP 10K 5%	1/10W
R25	1-216-073-00	METAL CHIP 10K 5%	1/10W
R26	1-216-049-00	METAL CHIP 1K 5%	1/10W
R27	1-216-049-00	METAL CHIP 1K 5%	1/10W
R28	1-216-049-00	METAL CHIP 1K 5%	1/10W
R29	1-216-085-00	METAL CHIP 33K 5%	1/10W
R30	1-216-085-00	METAL CHIP 33K 5%	1/10W
R31	1-216-073-00	METAL CHIP 10K 5%	1/10W
R32	1-216-051-00	METAL CHIP 1.2K 5%	1/10W
R37	1-216-025-00	METAL CHIP 100 5%	1/10W
R38	1-216-089-00	METAL CHIP 47K 5%	1/10W
R39	1-249-405-11	CARBON 100 5%	1/4W
		< TRANSFORMER >	
T1	1-404-983-11	TRANSFORMER, IF	
		< CRYSTAL >	
X1	1-578-785-11	VIBRATOR, CRYSTAL 4.5MHz	

****

SPEAKER (L) SPEAKER (R) SWITCH

Ref.No.	Part No.	Description				Remark
*	1-641-557-11	SPEAKER (L) BOARD				
		**********				
		< CAPACITOR >				
C195	1-123-544-00	ELECT	2.2uF	20%	50V	
		< CONNECTOR >				
* CN101	1-564-519-11	PLUG, CONNECTOR 4P				
**********						
*	1-641-558-11	SPEAKER (R) BOARD				
		**********				
		< CAPACITOR >				
C295	1-123-544-00	ELECT	2.2uF	20%	50V	
		< CONNECTOR >				
* CN201	1-564-519-11	PLUG, CONNECTOR 4P				
**********						
*	1-641-174-11	SWITCH BOARD				
		**********				
		< CONNECTOR >				
CN803	1-580-368-11	HOUSING, CONNECTOR (PC BOARD) 12P				
CN805	1-580-368-11	HOUSING, CONNECTOR (PC BOARD) 12P				
		< DIODE >				
D830	8-719-970-07	LED	MPG3371X-150 (SOUND MODE)			
D832	8-719-985-16	LED	MVR5064X (TAPE)			
D833	8-719-985-16	LED	MVR5064X (RADIO)			
D834	8-719-985-16	LED	MVR5064X (CD)			
D835	8-719-985-16	LED	MVR5064X (OPR/BATT)			
D836	8-719-985-16	LED	MVR5064X (FM ST)			
D837	8-719-985-16	LED	MVR5064X (STANDBY)			
		< IC >				
IC807	8-749-920-83	IC	GP1U52XB			
		< RESISTOR >				
R810	1-249-425-11	CARBON	4.7K	5%	1/4W	
R811	1-249-415-11	CARBON	680	5%	1/4W	
R812	1-247-830-11	CARBON	910	5%	1/4W	
R813	1-249-418-11	CARBON	1.2K	5%	1/4W	
R814	1-247-838-00	CARBON	2K	5%	1/4W	
R815	1-247-842-11	CARBON	3K	5%	1/4W	
R816	1-249-427-11	CARBON	6.8K	5%	1/4W	
R817	1-249-432-11	CARBON	18K	5%	1/4W	
R818	1-249-425-11	CARBON	4.7K	5%	1/4W	
R819	1-249-415-11	CARBON	680	5%	1/4W	
R820	1-247-830-11	CARBON	910	5%	1/4W	
R824	1-249-425-11	CARBON	4.7K	5%	1/4W	
R825	1-249-415-11	CARBON	680	5%	1/4W	
R826	1-247-830-11	CARBON	910	5%	1/4W	
R827	1-249-418-11	CARBON	1.2K	5%	1/4W	
R828	1-247-838-00	CARBON	2K	5%	1/4W	
R829	1-247-842-11	CARBON	3K	5%	1/4W	
R830	1-249-427-11	CARBON	6.8K	5%	1/4W	
R831	1-249-432-11	CARBON	18K	5%	1/4W	
R832	1-249-425-11	CARBON	4.7K	5%	1/4W	
R833	1-249-415-11	CARBON	680	5%	1/4W	
R834	1-247-830-11	CARBON	910	5%	1/4W	
R835	1-249-418-11	CARBON	1.2K	5%	1/4W	
R836	1-247-838-00	CARBON	2K	5%	1/4W	
R837	1-247-842-11	CARBON	3K	5%	1/4W	
R838	1-249-427-11	CARBON	6.8K	5%	1/4W	
R839	1-249-432-11	CARBON	18K	5%	1/4W	
R840	1-249-425-11	CARBON	4.7K	5%	1/4W	
R841	1-249-415-11	CARBON	680	5%	1/4W	
R842	1-247-830-11	CARBON	910	5%	1/4W	
R843	1-249-418-11	CARBON	1.2K	5%	1/4W	
R844	1-247-838-00	CARBON	2K	5%	1/4W	
R845	1-247-842-11	CARBON	3K	5%	1/4W	
R846	1-249-427-11	CARBON	6.8K	5%	1/4W	
R847	1-249-432-11	CARBON	18K	5%	1/4W	
R848	1-249-415-11	CARBON	680	5%	1/4W	
R850	1-249-418-11	CARBON	1.2K	5%	1/4W	
R851	1-249-418-11	CARBON	1.2K	5%	1/4W	
R852	1-249-418-11	CARBON	1.2K	5%	1/4W	
R854	1-249-418-11	CARBON	1.2K	5%	1/4W	
R872	1-249-429-11	CARBON	10K	5%	1/4W	
		< SWITCH >				
S801	1-692-014-11	SWITCH, KEY BOARD (TIMER)				
S802	1-692-014-11	SWITCH, KEY BOARD (REC/PAUSE)				
S803	1-692-014-11	SWITCH, KEY BOARD (TAPE AMS FF)				
S804	1-692-014-11	SWITCH, KEY BOARD (TAPE AMS REW)				
S805	1-692-014-11	SWITCH, KEY BOARD (COUNTER RESET)				
S806	1-692-014-11	SWITCH, KEY BOARD (REC MUTE)				
S807	1-692-014-11	SWITCH, KEY BOARD (OPEN/CLOSE)				
S808	1-692-014-11	SWITCH, KEY BOARD (CLOCK)				
S809	1-692-014-11	SWITCH, KEY BOARD (DISPLAY)				
S810	1-692-014-11	SWITCH, KEY BOARD (SOUND MODE)				
S814	1-692-014-11	SWITCH, KEY BOARD (POWER)				
S815	1-692-014-11	SWITCH, KEY BOARD (SLEEP)				
S816	1-692-014-11	SWITCH, KEY BOARD (FUNCTION)				
S817	1-692-014-11	SWITCH, KEY BOARD (BAND)				

SWITCH | VOLTAGE SELECTOR | VOLUME

Ref. No.	Part No.	Description	Remark
S818	1-692-014-11	SWITCH, KEY BOARD (PRESET+)	
S819	1-692-014-11	SWITCH, KEY BOARD (PRESET-)	
S820	1-692-014-11	SWITCH, KEY BOARD (TUNING/TIME SET+)	
S821	1-692-014-11	SWITCH, KEY BOARD (TUNING/TIME SET-)	
S822	1-692-014-11	SWITCH, KEY BOARD (TAPE STOP)	
S823	1-692-014-11	SWITCH, KEY BOARD (TAPE FWD)	
S824	1-692-014-11	SWITCH, KEY BOARD (TAPE REV)	
S825	1-692-014-11	SWITCH, KEY BOARD (DECK A/B)	
S826	1-692-014-11	SWITCH, KEY BOARD (SHUF/PGM)	
S827	1-692-014-11	SWITCH, KEY BOARD (DIR MODE)	
S828	1-692-014-11	SWITCH, KEY BOARD (DUBBING HIGH)	
S829	1-692-014-11	SWITCH, KEY BOARD (DUBBING NORM)	
S830	1-692-014-11	SWITCH, KEY BOARD (CD STOP)	
S831	1-692-014-11	SWITCH, KEY BOARD (CD PAUSE)	
S832	1-692-014-11	SWITCH, KEY BOARD (CD PLAY)	
S833	1-692-014-11	SWITCH, KEY BOARD (CD AMS/SEARCH REW)	
S834	1-692-014-11	SWITCH, KEY BOARD (CD AMS/SEARCH FF)	
S835	1-692-014-11	SWITCH, KEY BOARD (EDIT/CLEAR)	
S836	1-692-014-11	SWITCH, KEY BOARD (SEND→)	
S837	1-692-014-11	SWITCH, KEY BOARD (SEND←/MEMORY)	
S838	1-572-935-11	SWITCH, SLIDE (DOLBY NR)	
S839	1-572-935-11	SWITCH, SLIDE (FM MODE)	
S840	1-692-014-11	SWITCH, KEY BOARD (STANDBY)	
**********			
*	1-643-506-13	VOLTAGE SELECTOR BOARD **********	
*	3-378-271-01	BRACKET (VOLS)	
		< SWITCH >	
⚠S951	1-552-026-00	SWITCH, VOLTAGE CHANGE OVER (VOLTAGE SELECTOR)	
**********			
*	1-641-166-11	VOLUME BOARD **********	
		< CAPACITOR >	
C191	1-124-477-11	ELECT 47uF 20% 25V	
C291	1-124-477-11	ELECT 47uF 20% 25V	
C910	1-101-004-00	CERAMIC 0.01uF 50V	
C911	1-124-907-11	ELECT 10uF 20% 50V	
C912	1-162-211-31	CERAMIC 33PF 5% 50V	
C913	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C914	1-124-907-11	ELECT 10uF 20% 50V	
C915	1-101-004-00	CERAMIC 0.01uF 50V	
C916	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C917	1-101-004-00	CERAMIC 0.01uF 50V	
C918	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C960	1-124-472-11	ELECT 470uF 20% 10V	
C961	1-136-165-00	FILM 0.1uF 5% 50V	
		< CONNECTOR >	
* CN905	1-566-973-11	PIN, CONNECTOR (PC BOARD) 8P	
* CN906	1-568-455-11	PIN, CONNECTOR (PC BOARD) 10P	
CN910	1-564-507-11	PLUG, CONNECTOR 4P	
		< DIODE >	
D910	8-719-911-19	DIODE 1SS119	
D911	8-719-110-53	DIODE RD20ES-B2	
		< IC >	
IC906	8-759-962-08	IC BA6208	
		< JACK >	
J902	1-566-891-11	JACK (STEREO MINI JACK)	
		< COIL >	
L901	1-410-971-11	INDUCTOR 10uH	
L902	1-410-977-11	INDUCTOR 100uH	
L910	1-408-080-00	INDUCTOR 100uH	
L911	1-408-080-00	INDUCTOR 100uH	
L912	1-408-080-00	INDUCTOR 100uH	
		< TRANSISTOR >	
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q902	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R185	1-249-406-11	CARBON 120 5% 1/4W	
R285	1-249-406-11	CARBON 120 5% 1/4W	
R905	1-249-405-11	CARBON 100 5% 1/4W	
R906	1-249-440-11	CARBON 82K 5% 1/4W	
R907	1-249-441-11	CARBON 100K 5% 1/4W	
R908	1-249-437-11	CARBON 47K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV901	1-241-653-11	RES, VAR, CARBON 20K (VOLUME)	
		< TRANSFORMER >	
T902	1-450-126-21	TRANSFORMER, DC-DC CONVERTER	
**********			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
61	1-690-474-11	WIRE, PARALLEL (FFC) (13 CORE)	
62	1-690-475-11	WIRE, PARALLEL (FFC) (24 CORE)	
63	1-690-476-11	WIRE, PARALLEL (FFC) (24 CORE)	
112	1-690-472-11	WIRE, PARALLEL (FFC) (13 CORE)	
113	1-690-473-21	WIRE, PARALLEL (FFC) (16 CORE)	
167	1-690-477-11	WIRE, PARALLEL (FFC) (12 CORE)	
168	1-690-478-11	WIRE, PARALLEL (FFC) (5 CORE)	
169	1-690-479-11	WIRE, PARALLEL (FFC) (26 CORE)	
⚠305	8-848-144-11	OPTICAL PICK-UP KSS-240A	
ANT1	1-501-480-11	ANTENNA, TELESCOPIC	
M601	A-3133-405-A	MOTOR ASSY, CAPSTAN... (DECK A)	
M602	A-3253-101-A	MOTOR ASSY, REEL... (DECK A)	
M651	A-3133-405-A	MOTOR ASSY, CAPSTAN... (DECK B)	
M652	A-3253-105-A	MOTOR ASSY, REEL... (DECK B)	
HE301	A-3253-103-A	HEAD ASSY, ROTARY... (DECK B)	
HP301	A-3253-099-A	HEAD ASSY, ROTARY... (DECK A)	
HRP301	A-3253-103-A	HEAD ASSY, ROTARY... (DECK B)	
PM601	1-454-533-11	SOLENOID, PLUNGER... (DECK A)	
PM651	1-454-533-11	SOLENOID, PLUNGER... (DECK B)	
SP101	1-544-571-11	SPEAKER	
SP151	1-544-570-11	SPEAKER	
SP201	1-544-571-11	SPEAKER	
SP251	1-544-570-11	SPEAKER	

****

ACCESSORIES & PACKING MATERIALS

****

	1-465-906-11	COMMANDER, REMOTE (STANDARD TYPE) (RMT-C5)	
⚠	1-569-008-11	ADAPTER, CONVERSION 2P	
⚠	1-590-961-11	CORD, POWER	
*	3-373-108-01	CUSHION (UPPER)	
*	3-373-109-01	CUSHION (LOWER)	
*	3-379-523-01	INDIVIDUAL CARTON	
	3-754-169-11	MANUAL, INSTRUCTION (JAPANESE, ENGLISH, KOREAN)	

****

Ref. No.	Part No.	Description	Remark
		HARDWARE LIST	
		**********	
#1	7-685-647-79	SCREW, TAPPING +BV 3X10	
#2	7-682-549-04	SCREW +B 3X10	
#3	7-621-255-35	SCREW +P 2X5	
#4	7-621-775-10	SCREW +B 2.6X4	
#5	7-685-233-19	SCREW +KTP 2.6X6 TYPE2NON-SLIT	
#6	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#7	7-621-772-00	SCREW +B 2X3	
#8	7-621-770-67	SCREW +P 2.6X6	
#9	7-627-553-47	PRECISION SCREW +P 2X4 TYPE 3	
#10	7-621-255-15	SCREW +P 2X3	
#11	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT	
#12	7-685-646-79	SCREW, TAPPING +BV 3X8	
#13	7-621-772-20	SCREW +B 2X5	
#14	7-685-648-79	SCREW, TAPPING +BV 3X12	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

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ZS-5

SONY
SERVICE MANUAL

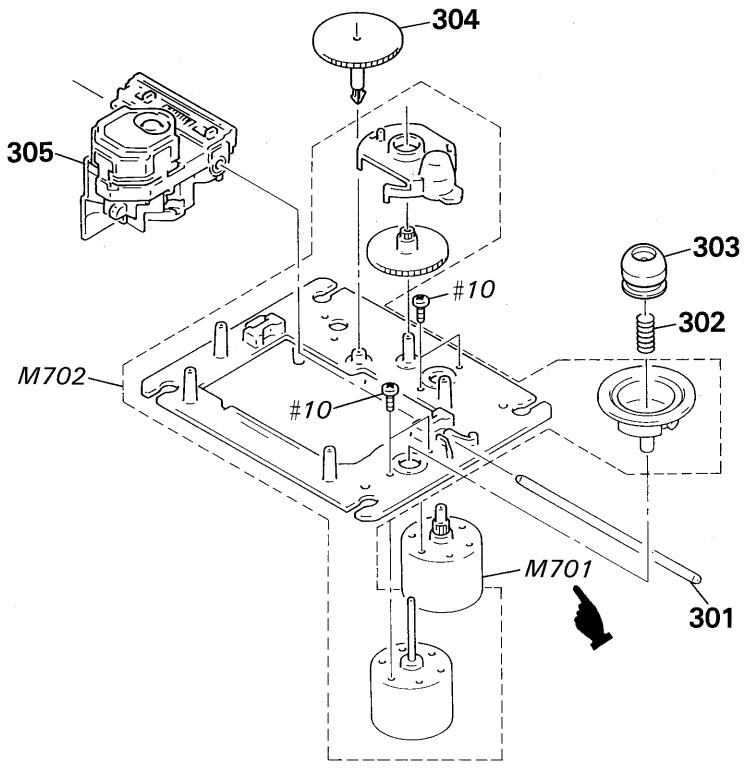
Tourist Model

SUPPLEMENT-1

File this supplement with the service manual.

This manual provides correction of service parts numbers and addition of block diagrams.

Page	Ref. No.	incorrect			correct		
		Part No.	Description	Remark	Part No.	Description	Remark
81, 87	M701	X-2625-132-2	MOTOR ASSY, SPINDLE (TT CHASSIS ASSY (MB))		X-3366-070-1	MOTOR ASSY	



9-956-835-82

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92L1817-1
Printed in Japan

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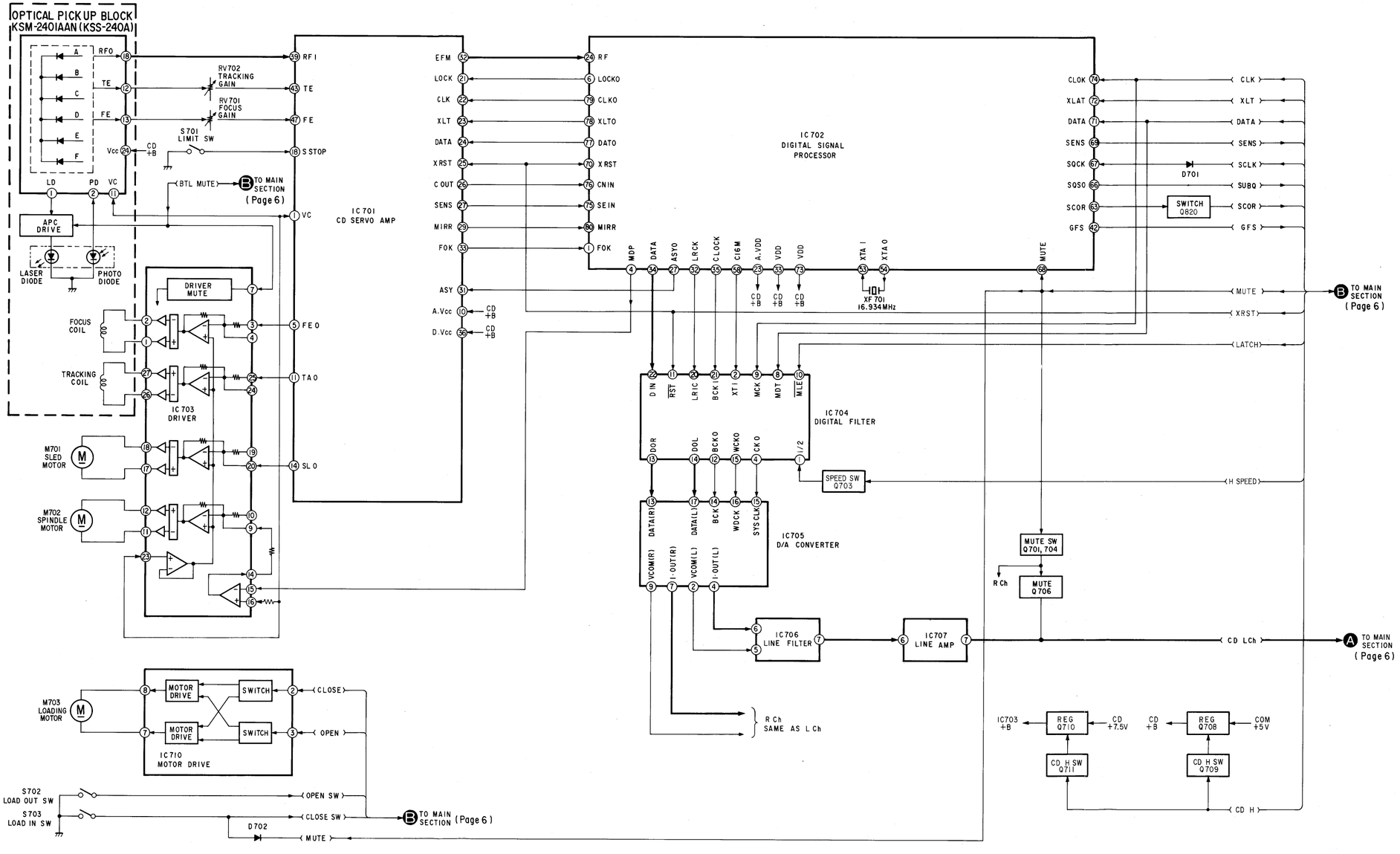
CD block



R-CH : SAME AS L-CH

ZS-5

SONY
SERVICE MANUAL

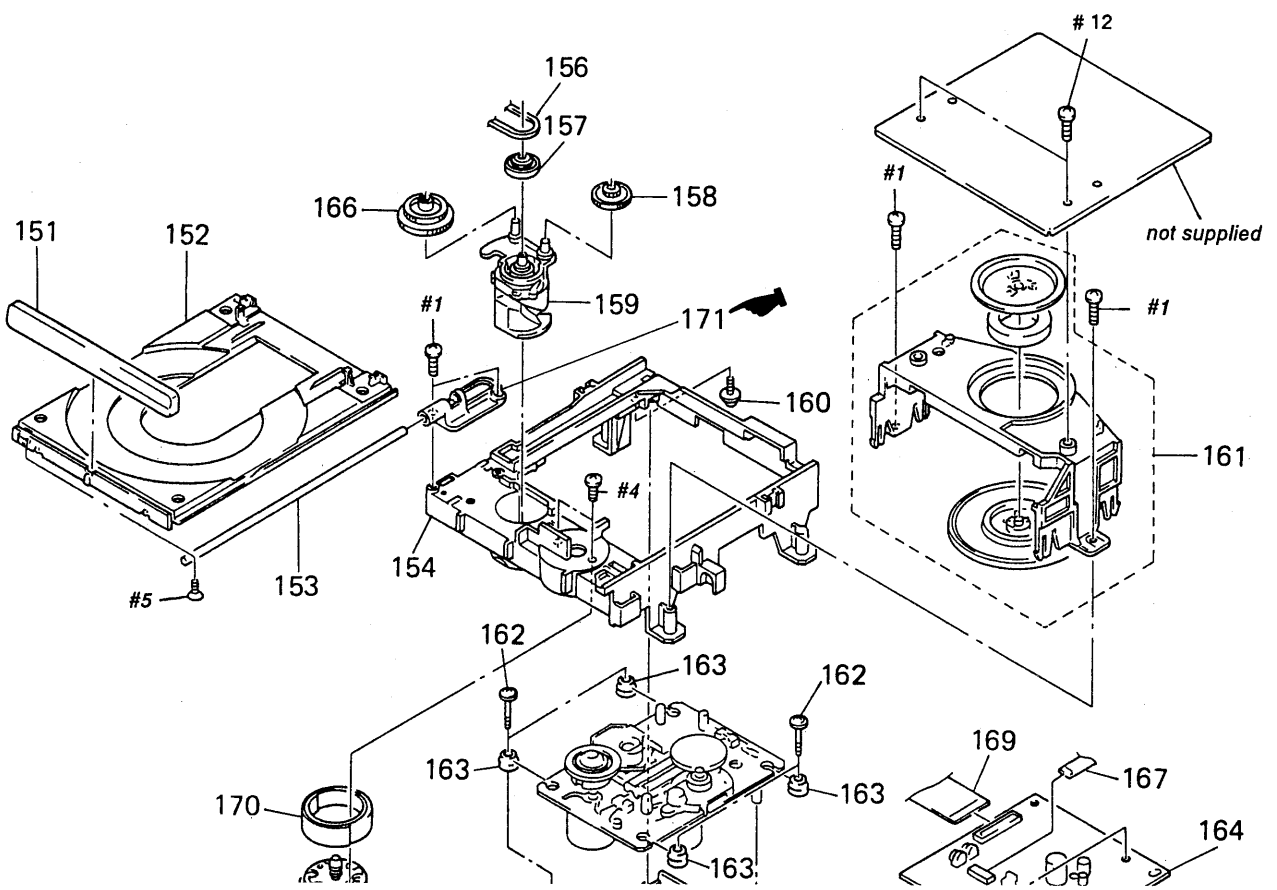
Tourist Model

CORRECTION-1

File this Correction with the Service Manual.

☛ : Correct Portion

(4) CD CHASSIS SECTION (Service Manual See Page 79.)



Ref. No.	Part No.	Description	Remark
* 171	3-373-751-01	REARING ☛	

9-956-835-91

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